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MALIGNANT PARTURIENT FEVER IN EWES, AND JOINT DISEASE IN LAMBS.

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SOME time ago a discussion took place in the Obstetrical Society of London on the subject of Puerperal Fever.

Thinking that, as the disease in some points bore a striking analogy to Malignant Parturient Fever in the ewe, it would be interesting to members of the medical profession to know the views entertained by veterinary surgeons, I wrote to the editor of the *Lancet*, volunteering to forward for publication in that journal a paper on the subject. The offer was politely declined.

Recently the subject has been brought before the Obstetrical Society by Mr. Jonathan Hutchinson, and his remarks—with others which were made by gentlemen present at the meeting—have been published in the *Lancet*, and I observe also in the *Veterinary Journal*.

Now, while I am far from desirous of checking a desire on the part of physicians to make investigations in the domains of Comparative Pathology, and while I acknowledge our great indebtedness to the sister profession for much of our present

knowledge, I cannot, nevertheless, allow it to be supposed that the ideas of veterinary surgeons are so chaotic as to absolutely render them incapable of pronouncing an opinion upon the nature of such diseases as Malignant Parturient Fever in ewes, and Joint Disease in lambs. With this object in view, I forward to you for publication my lectures—delivered annually for the last three years, in the Edinburgh Royal Veterinary College—on these subjects.

MALIGNANT PARTURIENT FEVER.

THIS affection—variously denominated Inflammation, Puerperal Fever, Milk Fever, Metro-Peritonitis, and Puerperal Peritonitis—is a true blood disease, analogous in its causes to all forms of Anthrax and Carbuncle. The term *Inflammation* is applied indiscriminately in Scotland to any disease in which there is an inflamed or black appearance of any part of the body. *Puerperal* refers to child-bearing; hence, in one sense, it is inapplicable in veterinary nomenclature. *Milk Fever* is also a common term in use in Scotland to denote any febrile or inflammatory affection arising in parturient animals. *Metro-Peritonitis* signifies inflammation of the womb and the peritoneal or serous lining of the abdomen; and inasmuch as this disease differs from true inflammation in many of its characters, and as the peritoneum is only occasionally involved, the term Metro-Peritonitis is a misnomer. *Malignant Parturient Fever* is, in my opinion, the best and most expressive term, and seems to distinguish it from simple Parturient Fever—referred to hereafter—though, in the true sense of the term, it is not really a fever, inasmuch as it has no well-defined incubative stage.

Malignant Parturient Fever is confounded with Parturient Apoplexy and Parturient Paralysis. It differs from each by its frequently occurring as an enzoötic affection, and most often in ewes; by the absence of early brain and entire absence of spinal symptoms; by the evidences of blood disease apparent after death; and by its being traceable to well-defined local causes.

From braxy (Hæmatozymosis) it is distinguished by its affect-

ing only ewes, and by the blood not being in a fermentative *zymotic* condition. From inflammation of the womb, by its making its appearance at a much earlier period after parturition; by attacking a number of animals at once; and by—in true metritis—the absence of brain symptoms, or any signs of depravity of the blood.

Malignant Parturient Fever attacks all female animals, but is most frequently seen in the ewe, generally making its appearance in from three or four to twenty-four hours after parturition, though it may not appear for three or four days. Its fatality is great; duration from three to six or eight hours; if the animal rallies over the latter period, hopes of its recovery may be reasonably entertained.

Nature.—By some authorities this disease is looked upon as erysipelatous in its character, and that it is so, to some extent, is proved by erysipelatous inflammation of the udder being sometimes seen conjointly in the ewe. In the human subject, Puerperal Fever, a disease in many respects analogous to the one under consideration, is sometimes induced by the surgeon having previously had his hands imbued in erysipelatous fluids in making *post-mortem* examinations.

That it is a blood disease there can be no reasonable doubt, it is proved by its course and the *post-mortem* appearances; and it is more indubitably proved by the simple fact that the lambs of those ewes which escape the fever frequently become the subject of constitutional joint disease, and that equally the same if the lambs are the progeny of a particular ewe, or have been affiliated.

By many it has been thought to be contagious. To this doctrine I am decidedly opposed, with the reservation that if a shepherd introduces his hand which has been previously imbued in the discharges from the womb of a diseased sheep (and the same thing holds good if he has been engaged in making a *post-mortem* of any animal in whose system active blood changes of a morbid character have been going on) into the womb of an animal either predisposed to the affection or in a perfectly healthy state, he may communicate a disease (*Septicæmia*) by direct inoculation with his nails, or by the absorption (the mucous membrane being

in an extremely active state) of the fœtid decomposing gases from the skin of the hand by the blood-vessels of the uterus.*

Acting upon the belief that the disease is contagious, farmers have changed their shepherds without arresting the mortality: further, one lot of ewes on a farm, which has been subjected to a different system of management, will escape entirely, whilst the deaths in another lot will be numerous, although the same shepherd may have been engaged in delivering in each case. Still more conclusive is the fact that quite as many ewes succumb which have produced their lambs without assistance, as those to which help has been given.

Causes—Are similar to those of other blood affections, and by careful enquiry they can always be traced to peculiarity of management, *i.e.*, improper feeding, impure air, food, or water, or too close confinement, though it is an undoubted fact that certain peculiar states of the atmosphere exercise no inconsiderable share in its production.

The history of the following outbreak of this disease is the history of the majority. A farmer in ——shire placed his ewes, immediately after the rutting season, upon swede-turnips grown with various mixtures of artificial manure, said to contain large quantities of ammonia, nitrates, etc. The turnip crop that season being unusually luxuriant, the ewes were allowed their fill, and were kept on during the whole of the day, being placed on a hill pasture at night. A dry and mild winter prevented the outbreak of any other blood disease; but when the lambing season came on, numbers of the ewes died from Malignant Parturient Fever, and their lambs from Joint Ill, though the spring was dry and very mild, with the exception of occasional east winds.

A number of hogs were fed on the same turnips, but, in addition, had a full supply of hay and straw allowed them; they escaped without the loss of a single life from blood disease. The small quantity of grass which the ewes were enabled to pick up during the night was not sufficient to counteract the effects of the large quantity of abnormally forced roots which

* That a disease of this kind is not necessarily contracted by the hand having been imbued in decomposing matter, is proved by the fact that I have frequently taken away a decomposed fœtus, and delivered a healthy animal shortly after, without evil results.

they ate during the day; while, although the hogs were not removed from the turnip field either by night or day, the allowance of hay and straw counterbalanced the otherwise ill effects of the turnips.

The above-mentioned ewes were after a time removed from the turnips, placed upon fresh grass, and a dose of aperient medicine administered, the fatality both in the ewes and lambs being arrested coincidentally. Isolated cases of Parturient Fever may arise as the result of decomposition of coagula, of blood in utero, or other cause; but in this case it would not show itself in so short a time after parturition as is seen in the general run of cases, nor would it be so rapidly fatal.

Exciting Causes—Are the act of parturition, over-driving, excitement, railway travelling before or immediately after parturition, extremes of weather, barometrical or thermometrical, and retention of the placenta; the latter cause usually produces the disease in three or four days after parturition.

The question has frequently arisen, why is the womb always the seat of the disease, if it is simply a blood affection? To this I answer that it is not always the seat of the disease, and that it should be so more frequently than any other organ is easily explained by the fact that the womb is in an extremely excitable and vascular condition, and that certain matters (then useless to the system) have to be cast off from its surface immediately after parturition. A reference to the *post-mortem* appearances will further clear up this point.

Symptoms.—In the first stages we have the usual indications of Fever, all the secretions and excretions more or less diminished or altered in character: in ruminants, suspension of rumination; there may be either constipation or relaxation of the bowels, and, as the disease goes on, Diarrhœa, fœtid and sometimes tinged with blood, sets in; the urine, too, after a short time, may become scanty and high-coloured, with an admixture of blood from rupture of the small blood-vessels of the inner coat of the bladder. The animal is dull, listless, arches its back, stands or lies obstinately, or moves restlessly about, and if forced to move, does so stiffly, especially in hind legs; suffers from occasional rigors, gnashes its teeth, loses affection for its offspring, and

evinces abdominal pain; the mucous membranes are injected; the breathing hurried, and, if the lungs are involved, difficult; the pulse, at first tolerably full and strong, finally becomes rapid, fluttering, weak, and indistinct. The animal commences to strain violently, giving rise to the ejection per vagina of an unhealthy chocolate-coloured, fœtid, purulent discharge; and in some cases disturbance of the brain is evidenced, followed by delirium or coma and death. Some animals become tympanitic, and when the lesions are located in the womb, evince much tenderness on pressure being applied over the region of that organ.

Death is produced either by exhaustion of the nervous system, from the brain being supplied with impure blood, or from extravasation of blood underneath its membranes; by effusion of bloody serum into the bronchial tubes or the lung tissue; by pressure upon the diaphragm, from tympany, producing suffocation; or from the absorption of the purulent discharges into the blood—*Pyæmia* or *Septicæmia.*

Treatment—Is as a rule unsatisfactory. Early blood-letting has been recommended, followed by brisk purgatives. The bleeding may be useful if the state of the system indicates it; but I should certainly not advise the indiscriminate use either of it or strong purgatives. Mild laxatives are beneficial; drastic purgatives lower the system, and determine the diseased blood to the intestines, thus running the risk of inducing an attack of Dysentery. Diuretics may be had recourse to—especially those, as turpentine, camphor, and oil of juniper, which also possess antiseptic properties—with benefit. Other antiseptics, as powdered cinchona, may be administered with stimulants to support the system; and opiates—as hydrate of chloral and tincture of opium, or chlorodyne—to relieve the pain. Sedative injections should be thrown into the rectum, and mild antiseptic and opiate injections into the uterus itself, while externally (where practicable) mustard and hot cloths may be applied over the region of the womb. If there is evidence of recovery, gruel or milk may be administered, and in the convalescent stage care must be exercised in feeding and management, and a little tonic medicine exhibited. During the progress of the attack, and until recovery is completely established, the milk must be withdrawn

at intervals, and the offspring placed on another animal, or fed by the hand.

If erysipelatous disease of the udder supervenes, it must be treated by the topical applications recommended for that affection.

Post-mortem appearances.—Naturally the attention is first directed to the state of the womb. This organ is sometimes corrugated and hard; at other times flaccid and soft, and of a dark colour externally. On laying it open, its cavity will be found to contain a quantity of purulent matter similar to that discharged during life; some of the cotyledons in the sheep and cow are soft, pulpy, and disintegrated;* the blood-vessels, both large and small, are surcharged with black—coagulated or fluid—blood, giving the organ an inflamed appearance.† These abnormal conditions may be partial or general; in the first case the unaffected portions are of the same colour and firmness as the uterus of a healthy animal immediately after parturition; the external coat, *peritoneum*, of the uterus may or may not be affected; if it is, a quantity of sero-sanguineous, and in the worst cases a sero-purulent, fluid will be found in the abdominal cavity; ecchymoses, with discoloration, may exist in the mucous membrane of the os uteri, the bladder, the bowels, the stomach, the lungs, and trachea, underneath the pleura and the peritoneum, in the membranes of the brain, and within the structure, or under the membranes, of the heart. Sometimes the minute vessels of the mucous membrane of the intestines are surcharged with scarlet blood—*hyperæmic*—giving them the appearance of small patches of delicate red net-work. A little pressure removes the blood from these vessels; but occasionally the integrity of the membrane is destroyed, and it is easily removed by scraping, a pit-mark corresponding to the size of the hyperæmic patch being left behind.

* The structure of others is infiltrated with black grumous blood, and many of them present irregularly circumscribed yellow spots on their exterior, which, on microscopic examination, are seen to be made up of fat, pus, and mucus cells, granular matter and *débris*.

† The muscular coat is oftentimes found thickened from effusion of serum, a section presenting a glistening, œdematous-erysipelatous appearance. Patches of yellow lymph are occasionally present in the cellular tissue, uniting the fundus and horns of the organ with the ovaries.

The muscular structure throughout the body is dark, and in bad cases tarry, and of soft consistence; but although the lesions of the disease are most frequently located in the womb, the muscles of the hind-quarters are not necessarily the worst affected, in fact, are sometimes natural. The blood is black and coagulated, and the heart usually filled with a black clot. Neither the muscles nor the blood show any marked tendency to decomposition or putrefaction. The flesh is unfit for human food, though I have seen dogs eat both the flesh and the diseased internal organs with impunity, thus distinguishing the affection from Splenic Apoplexy. When the carcases of sheep, dying from this disease, are sent to market, the whole of the structures surrounding the vulva are removed by the butcher. I have not, as yet, detected micrococci or bacteria in the blood.

Preventives.—As with other blood diseases, avoiding exciting causes, and isolate the affected animals.

Results also are similar to those of allied affections. If an animal recovers from the disease, it may again become pregnant, and do well.

JOINT ILL IN LAMBS.

THIS disease, spoken of sometimes as Pyæmia, at others as Scrofulous Disease of the Joints, is the specific or Constitutional Synovitis of Simonds. It is asthenic in its character, is the result of blood-poisoning, and frequently presents erysipelatous lesions.

Although its character is by some eminent authorities recognised as tuberculous, and by others as pyæmic, I venture to assert that neither in its lesions nor its general course is it scrofulous; and when Pyæmia is present, it is only a secondary result. The sheep is obnoxious to tubercle, as a rule, and this is the strongest argument against its scrofulous character. Furthermore, the so-called scrofulous deposits in the joints are only altered fibrinous exudations. Again, Tubercle is seldom seen in sheep; and if it were, it is not at all probable that it would assume the enzoötic type.

In Norfolk it is known as *Schole*, a term derived from the

Greek, and signifying a misshapen or distorted appearance of the limbs or body.

It may be defined as an inflammatory affection of the synovial membrane of the joints, of a specific character; hence the terms, "Specific Synovitis," "Specific Arthritis." In its consequences it resembles the White Swelling of children, but is unlike it in not occurring in scrofulous subjects.

It attacks young animals, particularly lambs, calves, and pigs, but is seldom seen in the dog; in the three former animals it more frequently assumes an enzoötic, seldom an epizoötic type, and may occur in all animals as a sporadic affection. In some districts, and in particular seasons, it prevails extensively, but those animals which have attained the age of two months are rarely the subjects of it.

The *Causes* are heterogenetic, are entirely local, and can be traced to an impure or anæmic condition of the milk of the dam, as the result of improper systems of management, or the allowance of food deficient in the necessary constituents of the blood. Hence it is seen when the ewes have been fed on an abundance of turnips, without a sufficient allowance of hay or corn, particularly if the turnips are decaying, or have been unduly forced with artificial manures. Professor Simonds says it often occurs in heath lands which are much exposed, and which have been top-dressed with marl (undoubtedly, exposure is a prominent exciting cause to the development of the symptoms, as seen on some of the Scotch mountains, but it can scarcely be accredited with the actual production of the disease, except in sporadic cases); and further, that when ewes are feeding on decaying turnips or mangold wurtzel, the lambs are frequently the subjects of effusions of lymph between the muscles, this effusion being arrested when corn is given to the ewes.

That it is due to, and must be associated with, an altered condition of the mother's milk, is proved by the fact that it only attacks young animals while sucking the dam; that the ewes coincidentally die from Malignant Parturient Fever (though it must be borne in mind that it is not necessary that the ewe should evidence any external symptoms of a diseased condition of the blood, as pointed out in Purpura Hæmorrhagica); and

that it is frequently found to disappear on farms which have been heavily limed and drained, and also when a different system of management has been adopted.

Again, the general *post-mortem* appearances bear a strong resemblance to those of Distemper in the dog, especially of the hepatic form of this disease; and the enlarged and softened state of the liver, where external symptoms have not been manifested, points to disease of a typhoid character, brought on by the imbibition of impure milk.

In connection with this subject, and as showing the influence exerted by an altered condition of the mother's milk upon its offspring, I may cite a fact related to me by Dr. Craig, of Edinburgh, viz., that a lamb sucking an ewe which has been stung by an adder will die as the result of imbibing the poison through the lacteal secretion.

Exciting Causes.—Exposure, prevalence of east or north-east winds; cold, damp pastures (hence the more frequent localization of the disease in the joints); neglect at birth, allowing them to become covered with mud and dirt, thus preventing the dam licking them; excess of wet weather, etc.

Fatality very heavy, 40 to 50 per cent.

Duration indefinite, from a few days to a few months.

Symptoms.—A general febrile condition of the system, as shown by the injected state of the mucous membrane; quick, irritable pulse, irregularity of the bowels, hurried respiration, and refusal to suck; the animal persistently lies, and if made to move, does so unwillingly and very stiffly, with the back arched, and placing as little weight as possible on the affected limb or limbs, which are usually flexed, even in recubation, to remove pressure—this persistent flexion ultimately leading to contraction of the tendons and distorted limbs. If the disease continues, the muscles waste, causing the affected joint to appear larger than it really is. The characteristic swellings usually appear in the hocks, knees, and stifles, though they are not by any means confined to these particular joints. In character, they are round, have a doughy feel, are intensely painful to the touch, very hot, stationary, and increase in size. Thus they are like, yet dissimilar from, rheumatismal swellings; like them in being

located in the joints, and being hard, round, and tender; unlike them in being stationary, and attacking the internal structures of the joints—the primary lesions in Rheumatism being confined to the external ligamentous structures of these organs, and when attacking the interior of the joints, formative processes are evidenced; while in Joint Ill, degenerative processes predominate. As the disease progresses, and life is prolonged, the animal becomes emaciated; Diarrhœa sets in, the wool falls off, and a variety of changes are detected in the joints; erysipelatous inflammation makes its appearance in various parts of the skin of the body, especially at the external orifice of the urino-genital organs, at the postero-inferior part of the abdomen, and round the navel, in the latter position constituting *navel ill.* Local Dropsies are frequent under the jaw and other dependent positions, as the navel, which is said to be *pocked.* If blood is withdrawn during life, or collected after death, and set at rest for a time, it deposits a peculiar, dark-coloured, grumous mass at the bottom of the vessel, composed, so far as can be seen by the microscope, of altered blood cells. This deposit lacks the firmness of the other parts of the clot, and bears a close resemblance to half-fermented damson pulp. Bacteria are developed in the blood very shortly after death, and long before any putrefactive odour can be detected. Absorption of pus into the blood (*Pyæmia*) is indicated by elevation of the temperature, fœtor of the breath, diarrhœa, dark yellowish-red colour of the mucous membrane, gnashing of the teeth, rigors, and Hectic Fever; the latter being present also in ulceration of the joints.

External Changes in the Joints.—The swellings become softer, more irregular in outline, from bulging of the more flaccid portions of the synovial membrane and skin, and from portions of the effused lymph becoming liquefied, producing fluctuation, other portions remaining solid. The fluctuating swellings extend along the thecæ, or sheaths of the tendons, two joints often becoming thus connected with each other; finally, the skin over the most prominent portions of the joint becomes absorbed, ulcerates, and if not divided with the lancet or by accidental violence bursts, allowing of the escape of the contained fluids and semi-solid matter; and being followed by sinuous ulcers, caries, or abscess

proper, of the joint. The sinuses may extend a considerable distance from the joint, and discharge an ichorous, unhealthy fluid, accompanied by fœtor, if bony or ligamentous structure is involved. In some cases the exuded lymph simply becomes liquefied and absorbed, without any external opening being formed; in others—*i.e.*, when the lymph is plastic and the constitution strong—it undergoes healthy organization, and remains as a part of the joint, producing, however, permanent thickening, distortion, and stiffness.

Treatment not satisfactory; as even when recovery does take place, the animal is distorted and valueless. At the outset remove from the dam, give milk from healthy animals, beaten up raw eggs, and good nitrogenized gruels; place in dry, warm houses, and give gentle aperients, as castor oil—or better, a small dose of mercury with chalk; follow up by febrifuges and diuretics, as nitrate of potash and camphor, with nitric ether, or carbonate of ammonia; if much pain is evinced, give small doses of opiates—Dover's powder being the best agent of this class—or inject a small quantity of the solution of morphia underneath the skin of the joints. In the course of a few days tonic treatment should be adopted, as the administration of iron, alternated with iodide of potassium; or mineral acids with cinchona, or other vegetable tonics; and allow a little wine, good old ale, or porter.

Locally.—Apply a strong blister, as the compound iodine ointment, all round the joint, at the outset of the disease; and when the subsequent inflammation has subsided, keep the joints at rest and in their proper position by the use of light splints and bandages, leaving the joint exposed for further observation. As soon as any tendency to pointing is evinced, open the joint freely, evacuate its contents, and wash out the interior with a solution of carbolic acid in glycerine and warm water—one part of the first, two of the second, and forty or fifty of the last; afterwards apply pads of soft lint or linen and tow saturated in carbolic oil (one part to eight or ten), leaving an aperture inferiorly for the escape of discharge, and changing them every day. If granulations project above the skin, apply mild caustics or astringent lotions. If the ends of the bones are

carious, scrape and apply nitric or muriatic acid ; if sinuses are formed, obliterate, by the use of setons, or laying them open with the knife, treating them after as ordinary wounds.

In treating the results of this disease, it must be borne in mind that in young animals the reparative processes go on very rapidly ; and that what appears to be a very formidable wound is soon converted into a comparatively simple one. Animals, too, may, with a little trouble, be fattened, and their flesh utilized ; few can be preserved for breeding purposes.

Post-mortem appearances are *general* and *local.* The general, in the earlier stages, are effusion of lymph between intercostal muscles under the pleura and into the lungs and other organs ; hyperæmia or engorgement of the small blood-vessels of the mucous membrane of the stomach (fourth in ruminants) and intestines.

If the disease has existed for any length of time, erysipelatous exudations will be found under and within the structure of the skin of dependent parts, or effusion of serum (Dropsy) into the connective tissue, and into the various cavities of the body; the large blood-vessels—even those of the brain—will be filled with dark, grumous, damson blood ; the structure of the brain dark ; liver, often enlarged, friable, and full of minute abscesses (giving it a mottled appearance), which are frequently mistaken for scrofula ; all the organs and tissues tinged with the colouring matter of the bile ; the small vessels of the omentum charged with blood, the mucous coat of fourth stomach congested and black wherever the milk has lain in contact with it. In many cases (notably in some occurring in Mr. Dewar's practice), the urachus is black, a bluish-black hue extending some distance along the mucous membrane of the bladder. The umbilical vein is also black, and filled with a cheesy material—degenerated lymph, or coagulum of blood.

Local appearances—*i.e.*, in the joints—are, in the first stages, inflammation of the synovial membrane, which, in a short time, extends to the ends of the bones and ligamentous structures ; the whole having an intensely scarlet hue, which in a few days diminishes: coagulable lymph becomes effused into the cavities of the joints, forming perfect casts of their interior, and filling

up the interspaces between the bones. By-and-by the exuded lymph commences to soften and break down.

Molecular Adipose Degeneration.—From the contraction of the mass the fluid portion is pressed out, and intermixes with the degenerated lymph. Fluid is also thrown out from the irritated vessels of the joint, and aids in the softening of the lymph. After a time, suppuration is thoroughly established, and pus cells are distinguished by the aid of the microscope. The sheaths of the tendons running over the fronts of the joints become excessively inflamed, and the blood-vessels of the ligamentous structures filled with scarlet blood.

The cartilage covering the articular ends of the bones becomes ulcerated and blackened, as also the cancellated structure of the bones; extravasations of blood, from ulceration through the coats of the vessels, take place, the coagula either undergoing degenerations or healthy organization: in the latter case, distinct granulations being formed, which, on recovery, fill up the cavities formed by the lymph.

The flakes of lymph which are found floating in the fluid contents of the joints, or adherent to their sides, are often mistaken for scrofulous deposits.

If animals have lived sufficiently long, pyæmic multiple abscesses are found in the various organs and structures of the body.

Blood from diseased lambs introduced into the veins of a dog gives rise to the formation of multiple hepatic abscesses.

RABIES FROM THE BITE OF A NON-RABID DOG.

BY A. A. HOLCOMBE, D.V.S., PLAINFIELD, NEW JERSEY, U.S.A.

POSSIBLY a communication from this side of the Atlantic, upon the subject of the development of "Rabies" from bites of non-rabid dogs, may be of interest to the readers of the *Veterinary Journal.* On Thursday, March 9th, 1876, I was called by Mr. Scribner, Short Hills, to see a two-months' old Alderney calf that had refused to eat on the morning of the 8th, and had taken

no food since, because, as the owner said, it could not swallow. I saw it at two o'clock that afternoon, standing in a lot with its mother, and to the casual observer it showed nothing wrong, except a continual flow of tenacious saliva from the mouth.

Upon going nearer I noted nothing further, except a vacant, listless expression of the eyes. When the attendant approached the calf for the purpose of catching it, it started off as though suddenly frightened. As the owner thought it might be choked, I examined the œsophagus, but found no obstruction.

Thinking, from the salivation and the excitability of the animal, that it might be suffering from Tetanus, I examined the mouth, but the jaws were not "locked," while the membranes of the mouth were pale in colour, and covered by an unusual amount of saliva. At this juncture I noted that the left ear presented a wound, almost healed, yet purplish-blue in colour, and somewhat swollen. Upon inquiry, I learned that on the 19th of February a neighbour's dog came to the farm, and after "worrying" the little house-dog for a time, crawled through a hole in the barn, and bit the calf. From this place he went to another neighbour's farm, and tried to bite some of the fowls. Returning to Mr. Scribner's, he entered the parlour, the door being open, and laid down on the floor, where he remained until driven out with a broom. Thinking the dog acted strangely, one of the farm hands shot him in the leg, after which he went off. This, of course, was sufficient to make me suspect the calf had Rabies; so I directed my attention to the treatment of a fresh wound upon my left hand, which I had a few moments before covered with saliva from the patient. Watching the calf for a time, I noted that it would stand as though in deep thought, then suddenly start off on a run, bawling, and fall headlong on the ground, where it would lie in convulsions for a few seconds, then get up and repeat the same actions. Respirations, as well as pulsations, were increased in frequency. The temperature was not taken.

During the night coma came on, in which condition I found the patient on the morning of the 10th. The comatose condition would occasionally be broken by periods of delirium, when the poor little thing would either jump up and start off, only to

fall again in convulsions, or else the spasms would come on while it was lying still, when it would bite anything it could get its teeth upon. While lying comatose it would frequently roll its eyes and bawl piteously, as though dreaming. Toward night of the 10th, paralysis came on, and early on the morning of the 11th it died.

Now what seems strange to the "laity," is the fact that the dog which bit the calf is still *alive and apparently well*, except the gunshot wound on the leg. That the calf died of "Hydrophobia," or "Rabies," I cannot doubt, and that the disease developed in consequence of the bite upon the ear by a dog not affected with Rabies I cannot deny, unless Rabies is not necessarily fatal. There was no *post-mortem* examination made; so I cannot give you the pathological appearances, if there were any present. If I should be unfortunate enough to develop this dreaded malady, I will apprize you of the fact.

IMPROVED ASPIRATION.

BY JOSEPH WOODGER, JUNIOR, M.R.C.V.S., LONDON.

I HAVE, on many occasions, had to operate with the Pneumatic Aspirator, and have found its action very tedious, it being so difficult to remove any great quantity of air from a bottle with the air-pump in use. In fact, I have never been able to get more than a fifth or sixth part withdrawn. It therefore occurred to me that a much less tedious, and also a more certain way of producing a vacuum, might be adopted. On April 13th I tried an experiment which answered admirably,—indeed, quite beyond my expectations.

The plan I adopted was to generate carbonic acid gas from sulphuric acid and chalk, which I collected in some forty-ounce bottles, leaving in each about an ounce of water. The mouth of the bottles was stopped with the india-rubber stopper of the aspirator, of course with the tap turned off. The bottles were then well shaken to allow the water to absorb some of the gas, and inverted; the tube of the stopper was now inserted into a

vessel containing half an ounce of strong liquor ammonia; the stop-cock being turned on, the ammonia was speedily forced into the bottles, the cock being immediately closed. The bottles were then well shaken, and were ready for use.

The object of leaving an ounce of water in the bottles was to cause a small quantity of the gas to be taken up, and start the forcing of the ammonia into them. When once the ammonia is in the bottles, it quickly unites with the gas to form a solution of ammonia carbonate (one and a half ounce); so that we have a vacuum of thirty-eight and a half ounces.

It would be as well, when the bottles are about to be required for an operation, to have several charged with the gas, and ready for use, in case of accident.

NATIVE CAVALRY IN INDIA AND VETERINARY SURGEONS.

BY "MAX."

It was with feelings of the greatest satisfaction that I perused an article on the above subject by Mr. Poyser, in the February number of the *Veterinary Journal.*

Before offering a few remarks on it, permit me to give expression to the pleasure which was afforded me by a perusal of the various numbers of the journal which reached me by the last English mail. To the editor the veterinary profession has long ere this been placed under deep obligations, through his many scientific works; his unceasing endeavours to elevate the profession, of which his brother veterinary surgeons justly consider him an ornament; and lastly, by this his latest attempt to advance the cause of veterinary science by giving to the profession a new journal, independent in its tone, free from cliquism, and having only one object, namely, the advancement of veterinary medicine. Much indeed remains for the editor to accomplish, notwithstanding all that he has already done in behalf of the profession; and in wishing the new journal every success, I feel I am only giving expression to the sentiments of all my professional brethren in India.

Now to the subject of my letter—"Native Cavalry in India and Veterinary Surgeons." Some time ago this matter was brought under the consideration of Government; but, unfortunately, it was not considered expedient to place veterinary surgeons in charge of native cavalry regiments, in consequence of the extra expense that would be thereby incurred. However, matters have changed considerably within the last eighteen months. Two years ago the native cavalry had comparatively little difficulty in procuring remounts, and at low prices, in consequence of the large number of small weedy animals that were sold from the Government breeding establishments—horses too light for artillery or European cavalry, but still useful animals for irregular cavalry purposes. Now that these breeding establishments are no longer in existence, the officer commanding a native cavalry regiment has to go into the market and pay a much larger price for his remounts than heretofore; and what is more, he has to compete with the Government remount agent, who is authorized to pay as much as £50 or £60 for remounts. Of course, the result of such a system is that the irregular cavalry officer is compelled to pay more than he can afford, and to be satisfied with an inferior animal. From this it is evident that, although there may not have existed any positive necessity for veterinary surgeons in native cavalry regiments formerly, entrusting the care of regiments of native cavalry horses to ignorant native farriers (*salooteries*) must be, and is, a decided loss to the Government. What I state now is from years of experience, and I say most positively that I have frequently witnessed the destruction of valuable horses at the hands of one of these native "leeches;" cases which, if the services of scientific men had been available, the life of the animals would have been spared. I do not blame these men; they know nothing better—they have never been taught anything pertaining to veterinary medicine. Because a father had been a "salooterie," the son must necessarily follow in the same calling. It is the Government that is in error in such a matter. If, instead of placing the adjutant and his subordinate—the "salooterie"—in charge of the health of the horses, they would detail veterinary surgeons to do the duty, native cavalry regiments

would be more efficient than at present. A considerable saving in hard cash would be effected; and what is of considerably more importance still, none but sound animals would be passed into the regiments as remounts. I am sorry to say this latter is not the case at the present time. As has been pointed out in his article by Mr. Poyser, in a station where there is only one battery of artillery and one regiment of native cavalry, surely the duty would not be too heavy for one veterinary surgeon to attend both. I know many instances in which veterinary surgeons give their services to native cavalry regiments without asking for a fee, and I also know from experience that many veterinary surgeons would not complain if an order were issued to-morrow requesting them to afford veterinary medical aid to the horses of native cavalry. The more useful the members of a profession render themselves, the more benefit they confer in ministering to the wants of dumb creatures; and the more zeal and interest taken in the subject of a man's calling, the more will the public appreciate that profession.

I shall not enter further into the matter. Mr. Poyser has, I may almost say, exhausted the subject. My object is more to keep it before the public; and I may conclude my remarks by repeating what I wrote once before with regard to it, viz., "if there existed a necessity for a veterinary surgeon in a battery of artillery of one hundred and ten horses, surely there is greater necessity for one in a native cavalry regiment.

MELANOSIS.

BY B. MC INNES, V.S., CHARLESTOWN, SOUTH CAROLINA, U.S.A.

ABOUT the 1st of January last, a small grey mule, seven years old, was brought into the infirmary, showing the following symptoms:—Very peculiar gait, moving as if suffering from acute Rheumatism; respirations quick and laboured, and nostrils dilated; breath fœtid, and pulse quick and weak. When loose, it would stand with its head low, place its right fore-foot over the left, protrude its tongue from its mouth, and commence to

work its jaws—in fact, to chew its tongue. It would lie down and rest itself, but there seemed to be considerable pain when in that position, as its flank would heave, and occasionally a low groan could be heard. When first put into a stall, it would commence to eat; but suddenly, as if seized with some excruciating pain (or something which we, who judge from negative signs, suppose to be pain), its head would drop on the manger, and it would appear as if sound asleep. It would remain in this position for as long as an hour at a time. The fæces were of a light-brown colour, and in balls; the urine for the first two weeks was of a light-red colour, but on the third week it became more turbid.

Diagnosis.—Upon looking at the animal, and feeling the pulse, it would have been justifiable to say that this was a case of Pneumonia; but when I examined the lungs, I found them to be perfectly healthy, and the sounds of the heart normal. After a few days' thinking, I concluded that there must be something the matter with the liver, but what that something was I could not decide upon.

Treatment.—Not being able perfectly to diagnose the case, I confined myself to very simple treatment. I administered vegetable tonics, and a few doses of Soda Hyposulphate (ʒi.) to correct the fœtid breath; but these produced no effect. After about ten days I gave a cathartic of Aloes Barb (ʒiv.) in bolus, which so prostrated the animal that it lay in an apparently dying condition for three days. During this time I administered wheat-flour gruel until the purging ceased, when, much to my astonishment, the mule got up. It had become very poor during the attack, and being certain that it could not live long in this condition, I discontinued all treatment, and waited for the natural result. On the morning of January 20th, I found the mule dead.

Autopsy.—On removing the skin from the abdominal region there was a large quantity of light-coloured fluid, much resembling serum. Upon opening the abdomen, and removing the intestines, a sight presented itself which was remarkable and unexpected. The liver, which was of a very light colour, was intersected with many dark-brown and black spots, and every

lobe projected just as if it were *starched.* Its size was enormous, and its weight forty-six pounds—more than four times the weight of an ordinary (healthy) liver. On making a section of the gland, I found it was filled with numerous black tumours, not very hard nor very soft, but leaving a stain upon the blade of the knife. The spleen was of a dark colour, and contained several black tumours as large as a hen's egg; its weight was five pounds. The stomach and intestines were healthy. On sawing through the ribs, in order to examine the thorax, I found the cancellated structure of a dark character; the compact tissue was also infiltrated with much black pigment. The lungs were healthy, as were also the heart and pericardium. On the mediastinum were observed many nodules of black pigment, from the size of a pea to that of a bean. The middle ventricle of the brain contained as much as a table-spoonful of black pigment, having the consistence of pap. This, I think, accounts for the comatose condition of the mule. I did not examine the spinal cord; but I have no doubt that the whole track was invested with many of these tumours, or at least with much of this black pigment in a semi-fluid state, which produced partial paralysis of the posterior extremities more particularly, and impaired general locomotion.

Remarks.—The mule was fed on Indian corn and hay. It was kept in a well-ventilated stable, and worked in a plough three weeks before I saw it. Could these tumours have taken only a few weeks to form? It seems impossible. And yet, how could an animal live more than a few weeks with such a disease?

As to the probable cause and development of these tumours, especially in the liver, where they were so numerous, I venture to offer the following:—The blood passing into the liver, through its vein and artery, is highly charged with the ingredients from which the pigment is formed; and the secreting cells of the organ, being ever jealous to guard against any matter deleterious to the welfare of the economy, and this pigment being only required in very small quantities to tinge the hairs of the animal, these cells assume an extra-formative power, excrete from the blood this peculiar material, and the pigment so produced accumulates into tumours. These tumours increase, until at last

the gland becomes completely obstructed. The frequency with which the liver intercepts and retains metallic poisons for a considerable time in its own substance, may be adduced as evidence in favour of this supposition.

MORE NOVEL SURGERY.

BY ALBERT R. CHARLES, M.R.C.V.S., LONDON.

IN a recent number of the *Veterinary Journal,* I saw an article entitled "Novel Surgery," in which a bird had been sucessfully treated for a broken leg. I had a case a short time since, which, think, rivals it in novelty.

On the 27th March, a lady brought me a rat (*Mus maritimus*), which had been brought by Sir Samuel Baker from Africa, and as it became very tame, it was made a pet of by the children, and allowed to run about the nursery. It was provided with a rotatory cage, which had a very small opening leading from one compartment to the other; and from passing through this (as I imagine), the creature had so injured its left side, just posteriorly to the arm, that a fibrous tumour was formed among the muscles of the side. So large was this tumour, that it rested completely on the ground.

On April 1st, I had the rat securely held, and proceeded to operate. A longitudinal incision was made through the skin across the tumour; and on beginning to dissect it, it was discovered to be so encysted that it slipped out on to the table, having no attachment at any part.

I carefully washed the wound, and inserted two sutures, and in a few days the rat was quite recovered, the wound having healed by the first intention.

The tumour was of the class, "Fibromata," and weighed nine drachms.

I have treated most of the domesticated animals, but I never had quite such an uncommon patient before.

Editorial.

OUR ANNUAL MEETING.

THE Annual Meeting of the Royal College of Veterinary Surgeons on May 1 was largely attended, and the results of the gathering were very satisfactory, not only to the profession, but to its representative body—the Council. In the report of the year's proceedings there was much matter for discussion; indeed, we do not remember a year in which so many most important measures were brought forward—several of which were certainly of such a radical character that widely different, and even adverse opinions might have been expressed as to the benefits likely to be derived from them. On all these, however, there was a singular unanimity of sentiment; and there was also evinced an earnestness, a fairness of judgment, and a desire to look at things as they really are, which goes far to prove that the profession is becoming alive at last to its own necessities, and is determined, by its own action, to make a vigorous effort to clear itself from the shadow of the deadly upas tree to which it has for so many years surrendered itself. We may well contrast the meeting of 1875 with that of this year; and in calling to mind certain events which, had they not been counteracted by the energetic and determined action of the Council, would, there can scarcely be any reason for doubt, have left the future of the profession in this country to the tender mercies of a teaching school—nay, in the hands of one man; in recollecting all this, we have every reason to be thankful for what has been accomplished in preserving for us our undeniable privileges. If the profession will be taught by the dear-bought experience of the past, it will take care that no opportunity shall ever again be afforded for similar attempts to sap the foundations of its welfare. When the Council has become a more representative body than it can expect to be at present, there will be no danger of the profession being kept under the sway of those who are afraid of seeing it advance beyond the low narrow level to which they have long tried to fix it. Even during this year, measures have been devised which, while securing the privileges of our Corporation, will disenthral us from injurious control, and in addition will raise us—or rather give us an opportunity for raising ourselves—to that position which, but for an unfortunate combination of circumstances, we should long ago have occupied.

The dinner in the evening was a fitting complement to the meeting; and, thanks to our popular and indefatigable President, it proved something more than a success, as it was honoured by the presence of Lord Vaux, Major-General Shute, M.P., and Colonel Hawley, Military Secretary, who expressed the pleasure they experienced in meeting the profession on that occasion. General Shute's remarks were characterised by real good feeling towards veterinary science, the difficulties of which he fully appreciated—difficulties only to be overcome by education and close study. He confessed that it had been strangely neglected in this

country, but he did not omit to notice that much of this neglect was due to ourselves, as we had not pushed our way so vigorously as we might have done. Referring to the great future before us, the General was at home in the references he made to our colleagues in the army, whose position he acknowledged was eminently unsatisfactory, though he trusted the discontent which prevailed would be allayed before long. We were glad to note that the General fully appreciates the difference between the surgeon and veterinary surgeon; and this appreciation is particularly valuable in such a respected and influential member of the House of Commons. Whatever was done with the medical department in the army, he insisted that the veterinary department should be kept full and efficient. During war, civilian surgeons would readily join the army for the sake of the experience they might gain in surgery; not so veterinary surgeons, who would not be benefited in this direction, and would have no incentive to give up their business to encounter the hardships and risks of active service. The General paid a well-merited tribute of gratitude and respect to our old friend, the late Mr. Hallen, of the Inniskilling Dragoons, who was veterinary surgeon of that distinguished regiment when he and our worthy President were young officers in it, and whose deep interest in the progress of veterinary medicine was mainly, if not solely, due to the initiative and high personal character of our deceased colleague. Veterinary surgeons cannot take this example too closely to heart. Each member directly represents his profession in at least his own immediate sphere; and in direct proportion as he worthily represents it, so does he advance it. No legislation will ever make us what we are not; our present and future is in our own hands entirely, and our disabilities will all disappear when we have the courage to abolish the causes to which they are due. It is men of Mr. Hallen's type who make a profession and command respect for it; and for calling our attention to this great fact, and so eloquently impressing it upon us, if for nothing else, we give the General our warmest thanks. We fervently hope that our future annual gatherings will be as encouraging and pleasing as this has been, and that we may always be favoured with the presence and countenance of as influential and genial guests as on this occasion. Altogether the past year has been one of great progress and sound good work; and we would urgently solicit the aid and enthusiasm of our colleagues to complete what has been so auspiciously and so well begun.

ARMY VETERINARY SURGEONS AND THE EXTRA DUTIES NOW IMPOSED UPON THEM.

MANY veterinary surgeons entered the service with the object of being appointed to a regiment of cavalry or battery of artillery, and becoming an integral part of their corps. The duties of a regimental or battery veterinary surgeon are clearly defined, and he has but one commanding officer to obey. In this position his post is comparatively one of inde-

pendence, and his commanding and brother officers jealously resist any outside influence brought to bear on their veterinary surgeon. The great Duke said that he could get plenty of officers to serve for nothing; and there is no doubt that many of the best men in the veterinary profession were attracted to the army "for the honour of the thing:" that is, for the position which it gave them, and not so much for the pay; for in this respect they are much worse off than if they had engaged in private practice.

We know several veterinary surgeons who entered the profession solely with the view of obtaining a commission in the army, and who otherwise would not have selected it, but, like their brothers, would probably have entered the medical profession or the church.

Of late years, however, a disposition is manifested to break down this independent position of the army veterinary surgeon, and to utilize his services outside his regiment.

It dates its origin subsequent to the Crimean War: since, in fact, staff and departmental officers have increased in number. These officers being mounted for the purposes of the State, look to the State to afford them veterinary aid when necessary.

At the large camp at Aldershot this want has been recognised, and met, by the appointment of a veterinary surgeon, whose duty it is specially to afford veterinary aid, not to a corps, but to the horses of staff officers exclusively.

So far so good; but the fact having been recognised that staff officers have a right to veterinary attendance for their horses, the demand has extended far beyond Aldershot, until now, in every garrison town at home or in India, staff officers claim, almost as a right, the services of the nearest army veterinary surgeon, no matter what corps he may belong to, or what his other duties may be.

This innovation has been accomplished so gradually, that until quite recently not much notice was taken of it. But the time has arrived when it behoves the veterinary surgeons of the army, and those who contemplate entering it, to note the change which recent orders will make in their daily lives, and the altered circumstances of their position.

The above remarks are called forth by complaints which reach us from India, relative to an order that has been recently issued in that country, and which we quote from an Indian paper:—

"G.O. 401.—VETERINARY DEPARTMENT.

"With the sanction of Government,* the following rules, providing for veterinary attendance on the chargers of officers who under the present regulations are not entitled to the services of a veterinary surgeon, are issued for information and guidance.

"Veterinary surgeons will in future be required to afford medical treatment to the *bonâ fide* chargers of all officers of the staff of regiments of British infantry, of native cavalry and infantry, and of officers doing general duty, who may wish to avail themselves of their services.

"Officers so employing veterinary surgeons will be required to pay

* Military Department letter No. 916, dated 17th December, 1875.

rupees twenty-four per horse per annum, or rupees two per mensem for broken periods. Three-fourths of the above sums being for attendance, and one-fourth for Government medicines.

"When an officer or veterinary surgeon leaves a station, payment will be made to the date of the departure, but, except in the case of removal, any officer availing himself of the services of a veterinary surgeon, for however short a period, must pay rupees eighteen for each horse attended; but this payment will of course entitle him to veterinary attendance for nine months.

"Veterinary surgeons will submit, with their usual indents for veterinary medicines, a certificate on honour of the sums received by them during the past half-year, with a certificate from the paymaster or officer commanding the battery, stating in what month's account the portion due to Government will be found credited.

"The amount received by veterinary surgeons for Government medicines will be paid by them to the paymaster of the regiment or commanding officer of the battery with which they are serving, to be credited to the State on the regimental or battery pay list, supported by a copy of the certificates mentioned in the previous paragraph.

"Horses, unless fit to move, must be sent for treatment to the infirmary of the regiment or battery to which the veterinary surgeon belongs, provided there is sufficient accommodation.

"At stations where there are two or more veterinary surgeons, the officer commanding the station will detail one of those officers for the duty in question.

"The issue of medicines to officers' chargers need not be shown separately in the veterinary surgeon's returns."

Now the gist of this order we take to be as follows:—That a veterinary surgeon is bound to attend upon the horses of any staff or mounted officer when called upon.

For this duty he is to be compensated by the officer paying him two rupees (value about 3s. 6d.) per month, of which the veterinary surgeon must refund to Government one-fourth.

It will be seen that he is paid by the staff officer who employs him, and it may be for one month only, in case of removal. So that, in a severe disease, the veterinary surgeon may have to visit his patient daily three miles off, in the heat of the day, for a month, for the paltry sum of one rupee and a half.

There are several points in which one who has served in India will expect considerable friction to arise; for example, who is to decide whether or not the horse is fit to be moved to the Regimental Infirmary? In the event of his commanding officer requiring him in his own lines, who is the veterinary surgeon to obey?

The fact is, by this order, veterinary surgeons throughout India are now at the beck and call, at all hours, of almost every officer in the station where they may be quartered with their corps; their duties will be more severe, their general position far less satisfactory than it has been hitherto, and that at a time when it is much more difficult to induce men to enter the service.

The most distasteful feature of the order—we were going to say the most degrading—is that the veterinary surgeon must personally ask his brother officers for his paltry fee; nay, more, he is ordered by Government to vend its veterinary medicines to staff officers, collect the money, and refund to Government *on honour*. Anything more repugnant to the feelings of an officer and a gentleman, than the above mode of procedure, we have seldom noted in the records of official orders. We feel convinced that many veterinary surgeons would rather forego the petty fee altogether, than place themselves in such a humiliating position.

In India, we are aware that there are no civil practitioners, and it would be hard to deny to staff officers the only veterinary aid within reach; nay, more, we will go further, and state that it is of the highest importance, and in the interests of the service, that the horses of mounted officers in the field should be thoroughly efficient, and receive the best veterinary attendance available.

Moreover, army veterinary surgeons do not conceal from themselves the fact, that in this utilitarian age, serving for "the honour of the thing" is fast becoming a tradition of the past, and, as in other departments of the army, the country demands that its veterinary surgeons shall be veterinary surgeons and nothing more, and their services be utilized to the very best advantage. We are the last to deny the absolute necessity for this in the proper administration of the army. But the implied conditions under which they originally entered the service are by these orders considerably altered, and it is hardly fair to the Department to impose upon it extra duties without an equivalent in the way of remuneration, and to impose them in a way the most distasteful that can well be conceived to a body of well-deserving officers.

To deal with this question properly, as well as many other pressing questions, requires that the Department should be placed on quite a different footing.

From the greater demand for veterinary surgeons in civil life, their rapidly improving position and increasing emoluments, there is a strong disinclination to enter the army; many good men now decline to join it on account of having to go to India, where half the Department is serving; and if to this is now added duties irksome, distasteful, if not repulsive, the difficulty will be very greatly augmented.

THE "FITZWYGRAM" COMPETITION.

From the report of this competition among the recent graduates of the profession, and which appears in another portion of the *Journal*, it will be seen that there has been a great improvement among the competitors this year, the three prizes having been awarded. We heartily congratulate the victors, the first and second of whom were so remarkably close in the struggle, that there was only a difference of five marks between them. These prizes must effect a large amount of good, and it is to be

hoped that every year the contest for them will be closer, and the competitors more numerous. Nothing, we are certain, would give more satisfaction to the donor, or more largely benefit the graduates themselves.

THE FUTURE ARMY REMOUNT SERVICE IN INDIA.

With General Sir Samuel Browne's assumption of his new title, "Director of Remount Operations," the so-called stud commission expires, remarks the Indian *Pioneer*. Its duties of inquiry and demolition having been pretty effectively performed, the time has now come to consider what are our prospects of building up a new and more successful system upon the ruins of the old. We may state briefly, to begin with, the final orders on the subject recently issued by the Supreme Goverment. The Kurnal Depôt is to be abolished. The stallions not required for stud purposes will be sold or otherwise disposed of, and the Government mares which have been resumed from the *assamees* will also be disposed of, by sale or by transfer to the ranks or reserve depôts. The stallions and mares considered fit for stud and breeding purposes will be eventually allotted to the principal breeding districts of the North West Provinces and the Punjab, in such proportions and under such rules and restrictions as may hereafter be laid down. Mr. Hallen, V.S., is to report on the districts to be selected for breeding purposes, and to decide what number, class, and race of stallions should be allotted to them, according to the class of mares in each province. A remount officer is substituted for the present remount committees, whose duty it will be, under instructions from the chief of his department, to buy horses as full-grown remounts at up-country fairs and stations during the cold season. And he will include in his purchases three-year-olds, which will be retained at the reserve depots till fit for the service. The establishment of officers for the reserve-depots will consist of two Superintendents on 700 rupees (£70), and 600 staff respectively; two assistants on 350 rupees and 250 staff; and two veterinary surgeons on 300 rupees and 250 staff. The question of opening a farm or breeding establishment in the Punjab or elsewhere is still under consideration. Meanwhile the services of a qualified veterinary surgeon have been lent to the Punjab Government, to superintend their horse-breeding operations.

From the above sketch it will be seen that the arrangements by which a supply of horses is to be obtained for the public service hereafter are, theoretically, an almost entire reversal of the system of the past. For, whilst the Bengal Stud was a virtual monopoly of the horse-breeding enterprise of the country, the new Remount Department aims at satisfying its wants in the open market, and only interferes in the field of production at all with a view to supplementing the resources of the breeder. And this seems the sound and statesmanlike view of the position. That India possesses, or at least possessed, more than one indigenous breed of horses of considerable excellence, is notorious; so,

unfortunately, is the fact that they have deteriorated alike in quality and yield during our rule. Indeed, the tendency of all past administration in this branch has unquestionably been to discourage indigenous production, whilst most inadequately supplying its place. Thus the process of restoration will be long and laborious, although we admit that the measures now set on foot by Government are sufficiently well devised to that end. It may be said that in the North West horse-breeding as a profession has died out, whilst in all the native states it has languished with the dawning of a long reign of peace. But the breeders of the Punjab survive, and there, with a suitable climate and local conditions which favour the pursuit, we may expect a gradual revival of its ancient prosperity. But at the best, for years to come, our chief supplies of remounts must be drawn from foreign sources; and in view of this, since little or nothing is to be expected from the Cape, and not much more from Turkey and Arabia, the state of the Australian market, and the suitability of the "waler" for the wear and tear of service in this country, are of vital interest. We are not of the number of those who decry the "waler." In fact, the test by which he has been hitherto tried and condemned is absurdly inadequate and unfair. Until quite recently only the underbred and inferior stamp of animal found his way into the ranks; and if, when pitted against the best of other breeds, he was found wanting, nothing satisfied his critic but to condemn the class wholesale. We have lately taken occasion to visit the Remount Depot at Ballygunge, the chief depot, lately organized (and admirably maintained) by Mr. Thacker, and unless, with him, we are altogether mistaken as to the high quality and serviceable stamp of the cattle which he is now obtaining for the army, and promises to obtain in ample number, at two-thirds of the lowest price we have ever heard estimated as the cost of the stud-bred, they will bear comparison with any horse of any breed in use, or that ever has been in use, by the troops in India. The abolition of remount and casting committees, with all their waste and blundering, and the substitution of one capable and responsible man, is a reform of unquestionable value. But we cannot close our remarks without protesting against the perpetuation of a time-honoured abuse in the new order of things—if the absence of all mention of the subject, in promulgating the new rules must be accepted as evidence of the fact—in the matter of purchasing stallions at home for exportation to India. It is notorious that among the chief causes of failure in the studs of old was the unwise thrift, the ignorance, and we fear also the jobbery, which presided over this branch of the stud administration.

A NEW WORK ON VETERINARY OBSTETRICS.

THREE or four years ago, we intimated that we were preparing a treatise on Veterinary Obstetrics, which it was our intention to have completed without delay; but more urgent literary tasks presented themselves, and compelled us temporarily to abandon it. Having disposed of these, at the earnest solicitation of many members of the profession, we have

resumed the preparation of the treatise, the completion of which will now be accomplished with all convenient speed.

It has long been a source of regret in this and other English-speaking countries, that the practitioner or student had nothing better as a text-book on this very important subject, than the unscientific and notoriously imperfect work published at the commencement of the present century by Skellet. It is our desire to repair this deficiency, by producing a book that will place our colleagues at least on a level, in this respect, with the most advanced foreign veterinary surgeons, and prove worthy of acceptance as an exposition of this interesting and most useful branch of modern veterinary science.

It having been suggested that, for convenience and other reasons, it would be advisable to publish the work in parts, we have arranged to do so, and the first part will appear in July next, to be followed by the others at short intervals. The treatise will comprise eight or ten parts, and will be profusely illustrated; and besides treating of gestation and parturition, it will include the diseases and accidents incidental to this period, in the female and young animal.

INSPECTING VETERINARY SURGEONS IN INDIA.

By a recent "Gazette" of the government of India, we perceive that Staff Veterinary Surgeon Thacker is appointed Remount Agent. This is the second instance of a veterinary surgeon being appointed remount agent, the first having been Staff Veterinary Surgeon Collins when in Bombay; and the Department may take credit to itself that these appointments, entailing great responsibility and trust, are now given to its members.

We also perceive that Staff Veterinary Surgeon Hallen, of the local service, is gazetted Superintendent of Stud Operations, a post of equal responsibility and trust.

In consequence of these appointments, two inspectorships fall vacant, viz., Bombay and Lower Bengal; and we would fain hope that, in the selection of successors, some consideration may be shown to the sixty Queen's Veterinary Surgeons now serving in India, so that *all* the inspectorships may not be absorbed by the eight or ten local service veterinary surgeons remaining in that country, the last of the defunct order of things. Nothing but harm can result from a continuance of the system which has hitherto governed the selection for these appointments.

THE ONTARIO SCHOOL OF AGRICULTURE.

THE Government of Ontario, Canada, has appointed Mr. E. A. A. Grange, a graduate of the Ontario Veterinary College, and lately assistant demonstrator of anatomy, to be professor of veterinary surgery in the School of Agriculture at Guelph.

THE PREVENTION OF PAIN AFTER THE APPLICATION OF THE ACTUAL CAUTERY.

IN the *Philadelphia Medical Times* for March 18, Dr. Levis remarks on the increasing use of the actual cautery as a powerful therapeutical resource in the practice of the surgeon, and especially with regard to its influence by peculiar impression on peripheral nerves. One great drawback to its employment has been the severe pain that follows its application, and persists for some time afterwards. The local anæsthetic action of carbolic acid has been for some time recognised by surgeons; but no important practical applications appear to have been deduced, and its great powers in that direction seem not to have generally impressed the medical profession. Dr. Levis has been in the habit of taking advantage of this remarkable property of carbolic acid in his frequent resort to the actual cautery, with the result of the most complete avoidance of consequent suffering to his patients. His practice is to apply *pure* carbolic acid on and for a short distance around each point of application of the cautery, before the patient recovers from the influence of the general anæsthetic which has been used. For convenience of application, the crystals of carbolic acid are deliquesced by warmth, and the liquid applied with a brush. The part is then covered with any light dressing. Should pain recur after extensive or deep use of the cautery, the application may be renewed; but Dr. Levis had not found this necessary. Since the important fact of the local anæsthetic action of carbolic acid became known to him, he has more frequently used the actual cautery in surgical practice, particularly in neuralgic suffering and in chronic painful affections of joints, and always with freedom from suffering and with satisfactory results. We can testify to the beneficial action of carbolic acid as a local anæsthetic in horses, and would recommend its topical use in certain painful operations, wounds, and injuries.

DISEASE OF THE SKIN IN A DOG CAUSED BY A GRASS-TICK (HARVEST-BUG).

BY FRIEDBERGER.

(*Archiv für Wissenschaftliche und Practische Thierheilkunde*, 1875.)

PROFESSOR FRIEDBERGER, of the Munich Veterinary School, relates that in August, 1874, a young black Newfoundland dog was brought to him for examination and medical treatment. On inspecting the upper part of the head of this dog, there were observed a large number of bare, with a few scattered, but hard, spots, of an irregularly circular form, and about the size of a mark. At these places the skin was very dry-looking, slightly blood-streaked, and formed a raised flat surface, but without any thickening of the epidermis. On rubbing these spots the animal did not manifest anything unusual, or which would warrant one in concluding that they itched. On a close examination, Friedberger observed on the right eyelid another such hairless or nearly bald spot, and on it, though scarcely visible, was an active red-coloured little body, nothing similar to which was noticed on the other bare places.

The owner, who had been very attentive to the dog, and tended it with the greatest care, stated that he had always noticed at the places about to become bare this little red point (*Pünktchen*), after which there was redness of the skin, soreness of the part, quickly followed by shedding of the hair, which gradually extended until the bare place attained its largest dimensions, when

the same thing occurred in a contiguous part. He further stated that he had resorted to very energetic washing, believing that this would undoubtedly remove the red spots, but it only appeared to extend them. This state of affairs had been going on for about six weeks.

Friedberger succeeded in removing this red body from the skin, and, placing it under the microscope, discovered it to be a lively red-coloured mite, the nature of which was not immediately recognised, as the professor had not seen anything like it before. There specimens were found and examined; these did not vary much in size, and their average measurement gave the following result :—

Average length 0·43 millimetres
Average breadth 0·26 „

The head was very short and wide, and furnished with peculiar strongly developed antennæ, the terminal extremity of each of which had a hook or claw in the middle of a feathery-looking apophysis. There were three pairs of limbs, all of which were about the same in length and proportions; they were divided into five or six segments, and were studded with bristling hairs. All the legs had two lyre-shaped hooks attached to their distal extremity, but no sucker-disc; instead of this, each foot was knotty and thickened, and had a flattened hook-like termination provided with a close-set, fine, but hard, third

Fig. 10.
The *Leptus autumnalis:* under surface.

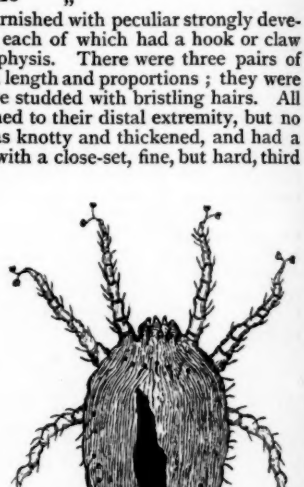

Fig. 11.
The *Leptus autumnalis:* upper surface. The preparation—previously invisible to the naked eye—is somewhat swollen, and is magnified ninety diameters.

hook, which might have been mistaken for the end of a bristle. The oval body was distinctly fluted or ridged—the under side transversely, the upper surface longitudinally. The abdomen appeared to be pretty closely studded with bristles. The red-coloured matter (shown in the wood-cuts as dark masses in the abdomen) to which the parasite owed its tint, was distributed throughout the body in small and large vesicles. Neither the circulatory nor the generative apparatus was observed.

Friedberger entertained the opinion that the epizoon shown in the figures s an incompletely developed female accidentally obtained from the above-

mentioned dog; but how or where that creature obtained the parasites was a mere matter for conjecture. The affected portions of the skin of the animal were ordered to be rubbed with carbolised glycerine (4 per cent. carbolic acid), and occasional washings with soap and water; and it was conjectured that recovery took place, as the dog was not brought to the hospital again.

After carefully consulting the literature of the subject, Friedberger is of opinion that we have here the identical mite which Küchenmeister, at page 428 of the first division of his work,* described and figured as the *Leptus autumnalis* (*Herbst* or *Grasmilbe*—the English "Harvest-bug."†) That distinguished authority says of the mite in question (following Von Siebold, he gave the parasite eight legs only during its juvenile condition, although the parasitic mite is not well known at that period‡):—During the harvest-time, in the dry grass, in the newly-cut grain crops, amongst ripe gooseberry bushes, and such-like vegetation, this mite is found, and from these it gets on the human skin, where it behaves like an *Ixode*, except that it bores into the integument with its head; it gives rise to little boils, papules, impetigo-like pustules, or shallow and not unhealthy ulcers. In these burrows the yellowish-red parasites, each no larger than the point of a needle, appear as yellow-red points in a series like a string of pearls, or are congregated in clusters. The life of the parasite is very brief. It is most frequent in its attacks only in July and the beginning of August; after this it probably retires into mossy places, and undergoes its further development or evolution. During the harvest-time it is often so violent in its attacks on man as to give rise to annoying itching, inflammation, swelling, and even fever; often they are in such crowds on the skin of the reaper, and particularly towards the hair-roots, that the red colour of the insect gives rise to an appearance known as "rouget." The creature seldom lives long as a parasite on the human skin—rarely tarrying more than some days. In unfavourable external circumstances, however, and when the annoyance persists in a certain locality where the mites are very numerous—as in a gooseberry garden—then the disease will recur repeatedly for weeks and months until the end of harvest.

In recent times, Professor Gudden § of Zurich has drawn attention to an invasion of the *Leptus autumnalis* in mankind, and also describes the insect. His description agrees with that of Friedberger's example in all essential characteristics, except that Gudden discovered a suction proboscis. The former certainly noticed what he imagined was a shred of epidermis adhering to the head of his specimen (which was not free, but attached to the dog's skin), and this may have been the remains of the trunk, the other portion having been left in the cuticle. Otherwise, the natural-history aspect of the question strictly corresponds with Friedberger's case, and he notes that the time at which the disease appeared in the dog was the period when the mites disappear and again collect; also that the owner of the animal lived in a house situated in the middle of an English park near Munich, where vegetation, such as dry grass and gooseberry bushes, was abundant.

Friedberger accounts for the parasites being located on the dog's head, to

* Die in und an dem Körper des lebenden Menschen vorkommenden Parasiten.

† The "Harvest-bug" belongs to the *Acaridæ*. It is common in autumn, in grass and herbage; and though exceedingly small, yet it producesextreme irritation of the skin in mankind. Its appearance on the integument of animals is a novelty.

It is known in France (Charente Inférieure) by the name of *Vandangeron, bête rouge* (Haute Garonne), and *Aoûti, Aoûtât, bête d'Août*, and *rouget.—E. V. J.*

‡ The most recent conjecture is that the juvenile form is a velvet-mite (*Sammetmilbe*), perhaps the common field and garden *Trombidium holosericeum*.

§ Virchow's *Archiv*, 1871, Band lii, s. 255.

the animal pushing through the bushes or long grass, and its face coming in contact with these, the bug could easily fix itself on the head, where the skin is fine and the hair short and soft. It could not extend beyond this, however, owing to the thick coat and thicker cuticle.

The professor claims this as a unique case in veterinary literature, though it should not be so when we remember that dogs are very often in situations where these insects abound. He also refers to a French writer, Defranc, making mention of the *Leptus autumnalis* attaching itself to the ear, upper part of the eye, and under the belly.*

PARAPLEGIA IN A HORSE, DUE TO OBLITERATION OF THE ILIAC ARTERIES.

BY SINOIR.

(*Recueil de Méd. Vétérinaire.*)

IN this journal for 1874, Sinoir, of Laval, gives a good description of a case of Paraplegia in a horse caused, it would appear, by considerable obliteration of the iliac arteries. His observations are too detailed for the space at our command, but the following summary, which he gives at the end of his paper, will suffice to explain the nature of the occurrence: A considerable clot, passing from the posterior part of the abdominal aorta, entirely obliterated the right external and the left internal iliac, and almost to the same degree, the right internal iliac. The circulation could be freely carried on through the left external iliac, though the entering orifice of this was nevertheless encumbered by a kind of nipple-shaped mass, detached from the principal clot contained in the aorta. In the presence of such an obliteration, it may fairly be asked how a continuance of life was yet possible; and how, above all, the posterior limbs were able to move at a walking pace, and even at the commencement of quicker paces. What was the determining cause of this arterial obliteration? If it is considered that the mare which was the victim of these disorders was endowed with great vigour and rapid action—qualities which her owner largely availed himself of—the following hypotheses are offered, and with all the more confidence of their being well founded because they are supported by the opinion of M. Goubaux: "The strains to which the vessels in question must have been exposed during the extensive and violent movements to which the mare was subjected, may have given rise to an arteritis at some point, and this would be the origin of the deposits of fibrinous coagula; gradually, in the course of time, these finally invaded all the large terminal divisions of the posterior aorta. A fact which greatly favours this notion is that the obliteration of the right femoral artery was at a part where the movements are more extensive than in the regions traversed by the external iliac which precedes it. Finally, it clearly arises from this description that *symptoms of paraplegia regularly manifesting themselves after a certain period of violent exercise, are a sure indication of an obliteration of the posterior aorta or its divisions.* In this particular case, it should be especially noted that the symptoms of paralysis first showed themselves in the right hind-limb—the side on which the obliteration was most complete, as was discovered at the autopsy."

* M.M. Mégnin and Mathieu, of Sevres, have seen a dog on which the harvest-bug had located itself. The former thinks the disease of sheep known in France as *noir-museau*, may be due to the *Leptus autumnalis*.—*E. V. J.*

STUDY ON THE ALTERATIONS IN THE BLOOD.

BY LAPTSCHINSKY.

IN the *Centralblatt* Laptschinsky gives the results of his study of the blood in various diseases. He considers the blood as a tissue, and limits himself to examining the histological modifications it may submit to under the influence of different pathological conditions.

In maladies which are accompanied by intense febrile indications, and particularly in infectious diseases, the histological constitution of the blood is in anything but a normal state. The blood globules are agglomerated in regular piles, though in different-shaped masses of variable volume. Each globule appears to be turgid and a little opaque, its outline being less distinct than usual. Some have been met with whose volume was very considerable; others were three or four times smaller than in the healthy state; and some appeared deeper coloured, while others were quite pale.

Between these different masses of globules floating in the plasma, there were observed very extensive clear spaces, in which were noted a very great number of leucocytes. By causing the fluid to move in different directions, it was easy to perceive that the red globules were glutinous and extensible. If, for example, one of the masses was divided into two portions, these would still remain united by a string of corpuscles presenting a fusiform arrangement. The leucocytes were more numerous, and were joined together in clusters of from three to eight. In a case of suppuration, in which the blood presented a veritable leukæmic condition, there was no hypertrophy, neither of the spleen, lymphatic glands, nor yet of the osseous medulla.

A short time after preparation of the blood drawn from fever patients, the majority of the leucocytes no longer appear to have a circular form; they have become irregular, show prolongations, and some are so pale that they cannot be seen in the field of the microscope. In these circumstances, the amœboid movements are easily distinguished without warming the preparation—proving that they are more rapid and marked than in the normal condition. The nuclei of the leucocytes themselves share in the amœboid movements; and in order to render this more evident, it suffices to add a drop of crystallisable acetic acid. The same effect is produced in healthy blood by raising it to a temperature of 40° Cent.

The crenelated form of the blood globules does not appear more quickly in blood from fever patients than from healthy subjects; but in some cases of pleurisy and pneumonia, and in two people attacked with typhoid fever, as well as in a case of cholera, Laptschinsky has been able to discover this alteration some hours before death.

The granular masses which Schultze believes to be molecular granules, and which are regarded by Riess as leucocytes in process of destruction, are but little abundant in the cachectic; but they become, on the contrary, very numerous in the feverish, and even after a single fit of fever.

In a case of Bright's disease, Laptschinsky discovered the existence of a large number of white globules and only a few red; the latter were very voluminous—measuring 0·009 millimetre—but he did not notice any contractile movements.

Abstract of the Proceedings of the Royal College of Veterinary Surgeons, Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

PROCEEDINGS AT SPECIAL MEETINGS OF COUNCIL, HELD ON THE 25TH APRIL, 1876.

Present—The President in the chair; Messrs. Broad, Dray, Field, Harpley, Moore, Talbot, Woodger, and the Secretary.

The Secretary read notice convening the meeting.

The minutes of last meeting were read and confirmed.

Correspondence.

The SECRETARY announced the receipt of letters from Mr. Cox and Mr. Meyer, regretting their inability to attend the meeting; also,

Letter from Mr. Moore, M.R.C.V.S., in which he presents to the library a copy of his work on the homœopathic treatment of the horse, a copy of "Diseases of Dogs," also a series of pamphlets.

On the motion of Mr. HARPLEY, seconded by Mr. FIELD, a vote of thanks was accorded to Mr. Moore for his presentations.

Letter from Dr. Dunsmure, in which he stated that he had sent off the diploma box from Glasgow, and that he purposed to be in London on Thursday next, when he would bring with him his financial statement of the examinations held in Scotland.

Scotch Examinations.

The SECRETARY reported that at a meeting of the Scotch Section of the Court of Examiners, held at Edinburgh on the 20th April, for the Pass Examination, six students passed and two were rejected. On the 21st eight passed and one was rejected.

At a meeting held at Glasgow on the 22nd April, five students from the Glasgow Veterinary College passed and obtained their diploma, and four were rejected.

At another meeting held in Glasgow on the same day, three passed and obtained the diploma of the College, and one was rejected, making a total of twenty-two passed and eight rejected.

At a meeting of the Scotch Section of the Court of Examiners, held at Edinburgh on the 19th April, two students passed their "First Examination," and from the Glasgow Veterinary College two passed and two were rejected.

The only student mentioned who passed with honours was that of Mr. Alexander Chivas, of the Glasgow Veterinary College.

The SECRETARY called attention to the fact that at the Scotch Examinations not only were lecturers in attendance, but also demonstrators and assistant-demonstrators.

The case of Mr. Steel having been present at one of the Examinations, referred to at the last meeting, having again come under consideration,

The SECRETARY, in answer to inquiries, said that the principal of the Royal Veterinary College informed him that Mr. Steel was an assistant-demonstrator of the Royal Veterinary College.

Mr. HARPLEY said, in that case Mr. Steel was not eligible to be present at the Examinations, and suggested that, as non-lecturers had also been present at the Scotch Examinations, the attention of the whole of the schools should be called to the subject.

It was subsequently moved by Mr. MOORE, seconded by Mr. WOODGER, and resolved, "That the attention of the principals of the schools be called to Bye-law 22."

Annual Report.

The annual report as submitted by the Committee was next considered; and after some alterations, it was moved by the PRESIDENT, and carried unanimously, that the report be received, adopted, and ordered to be printed.

The Auditors' Report

of the Treasurer's annual balance-sheet was then submitted, and on the motion of Mr. DRAY, seconded by Mr. MOORE, it was received and adopted.

Annual Dinner.

Mr. DRAY stated, on behalf of the Dinner Committee, that arrangements had been made for the Annual Dinner taking place at the London Tavern on Monday, 1st May, at six o'clock.

This concluded the business of the first special meeting.

Immediately afterwards,

Another Special Meeting

was held for the purpose of confirming Bye-law 22 as amended: viz.: "Each student who is a candidate for the diploma of the Royal College of Veterinary Surgeons shall, during his academical course, be subjected to two examinations before Boards appointed by the College; but no such examinations shall take place unless notice shall have been given, as hereinafter mentioned, by not less than nine students of their intention to present themselves for examination."

The bye-law as submitted to the Council was then duly signed and sealed according to the provisions of the Charter, and the alteration was confirmed.

This concluded the business, and

On the motion of Mr. DRAY, seconded by Mr. MOORE, a cordial vote of thanks was awarded to the President.

ANNUAL MEETING, MONDAY, MAY 1st, 1876.

THE thirty-third annual meeting of the Royal College of Veterinary Surgeons was held by advertisement, and in accordance with the provisions of the Charter, on the first Monday in the month of May, being the 1st day thereof, 1876, at the College, 10, Red Lion Square, Holborn, London.

COL. SIR F. FITZWYGRAM, Bart., President, in the Chair.

Present:—W. A. Loch, Esq., Parliamentary Agent; Professors Simonds, Brown, Pritchard, Axe, Williams, Walley, and Branford; Messrs. Balls, Banham, Banister, J. D. Barford, H. T. Batt, W. C. Bland, T. P. Boughton, F. C. Boulter, Thos. Briggs, T. D. Broad, J. C. Broad, Alfred Broad, T. Burrell, jun., B. Cartledge, H. J. Cartwright, R. H. Cartwright, A. R. Charles, Matthew Clarke, Alex. C. Cope, Joseph Davies, H. Dawson, W. Death, E. C. Dray, Henry Dyer, Wm. Duguid, Edwin Faulkner, Wm. Field, jun., Geo. Fleming, W. Furnivall, John Gerrard, Daniel Gibbon, G. J. Gould, T. W. Gowing, T. W. Gowing, jun., Thos. Greaves, Jas. Hall, H. J. Hancock, M. J. Harpley, Fred. Hewson, John Howard, Jas. Howell, Wm. Hunting, W. H. Jones, John Thos. King, H. Lawrence, John Lawson, Jas. Moon, Jas. Moore, T. Moore, M. E. Naylor, F. T. Oatway, C. Offer, Alfred J. Owles, W. Partridge, Philip Phillips, Israel Print, Wm. Rose, James Rowe, jun., C. C. Sanderson, H. R. Shaw, W. W. Smart, Wm. Smith, C. Snewing, Geo. South, jun., T. W. Talbott, H. W. Talbott, Robt. Ward, G. Whitworth, Wm. Wilson, S. H. Withers, Hicks Withers, Henry Withers, Joseph Woodger, Joseph Woodger, jun., F. W. Wragg, and the Secretary.

THE SECRETARY read the advertisement convening the meeting.

The minutes of the previous meeting were read and confirmed.

THE SECRETARY read the annual report and balance sheet. For two reasons we have not considered it expedient to publish this annual report: (1st) Because of the heavy demands upon our very liberal allotment of space; and (2nd) Because it contains nothing more than a summary of some of the principal proceedings of the Council meetings, as well as the proposed Supplementary Charter, all of which have been already placed before our readers.

MR. DRAY moved that the report, including the Treasurer's balance sheet, be received.

MR. MOORE seconded the motion, which was unanimously adopted.

MR. FURNIVAL asked why, in the report of the Education Committee, nothing was said about the indenture clause.

MR. OWLES said it was well to remember what the Council had achieved during the past year, and the difficulties against which it had to contend. There were some things in the report of which perhaps all the members could not approve. In the Supplemental Charter, for instance, there was no prohibitory clause preventing the assumption of the title of veterinary surgeon by persons who were not members of the College. He regretted the omission, but no doubt the President, who he was quite sure had the interests of the profession at heart, would be able to give some good reason for it. With regard to the clause requiring the Fellows to be twenty-six years of age, it appeared to assume that there was a certain age before which students could not become members of the profession. There ought to be such a regulation, but he was not aware of its existence. He thought it should be compulsory that the student must attain the age of twenty-one before being eligible to present himself as a candidate for the diploma. The clause required that a member should have been in practice five years before being eligible to become a Fellow, and as the age fixed was twenty-six, that assumed that he would be twenty-one on obtaining his membership. He did not think it desirable that young gentlemen, however talented they might be, should be launched into the world as certified veterinary surgeons before they were twenty-one years of age. With regard to clause 10, he could not see any reason for the exception made in favour of the present members of the Council, who ought to be subject to the same conditions as other members of the profession. They were no doubt competent to take the diploma of Fellowship, but he saw no reason why there should be an exception in their favour. Looking at the work of the Council, there was abundant evidence of hard work done in the interests of the profession, and work calculated to give members good hope for the future.

MR. FURNIVAL inquired whether the voting papers, alluded to in clause 11, would be opened prior to the general meeting.

MR. BRIGGS thought he was expressing the feelings of most provincial members by objecting to the proposed alteration of title to Royal Veterinary University. He said that a small private meeting of provincial members had been held, at which that feeling was generally entertained. Government, he thought, would not be inclined to grant a University. There were many members of Parliament who were members of some university, and they would look with jealousy on any proposal to establish another. He should like to move that the title Royal College of Veterinary Surgeons be adopted in the Supplemental Charter, instead of Royal Veterinary University.

MR. WILSON said he should be glad to hear some reasons for the proposed alteration of title.

THE PRESIDENT said that some members of the Council would have been

glad to insert an indenture clause, but in regard to education it was really impossible to work it. It could not be said that an apprenticeship of three years in the country should be taken instead of a portion of the lectures in the two or three years' course of instruction; and he believed Mr. Greaves himself, who moved the insertion of the clause, at length acquiesced in its omission. With regard to a penal clause, the Council was most desirous that such a clause should be inserted in the Charter. But they were informed by the Parliamentary Agent that no such power could be conferred by a Charter. There was as much power in the original Charter to prohibit unlicensed practitioners as could be given simply by a Charter. There was the power to bring a chancery suit, and probably to prosecute the person for improper treatment, if he were not a qualified member of the profession, but such a remedy was practically useless. A prohibitory clause such as was desired could only be obtained by an Act of Parliament; and as the legislature had not given that summary power to the medical profession, it was very improbable that they would concede it to veterinary surgeons. There was, however, nothing in the Supplementary Charter that would interfere with their right to seek Parliamentary powers when it was considered desirable to do so; on the contrary, that Charter would rather smooth the way towards any such application. With regard to the age of students before entering the profession, it would be found that the Council had full power to regulate all such matters. If, however, the proposal to extend the period of study from two to three years was adopted, it would be hardly possible for any young gentleman to obtain a diploma before he was twenty-one. With regard to the exception of the present members of the Council in clause 10, it was simply in accordance with the usual custom of saving the rights of present holders. With reference to the question of opening the voting papers, the Council had power to make all the necessary regulations in matters of that sort. As to the change of name, it was felt by the Council that veterinary science had so far advanced that it was desirable, if possible, to connect it with the name of University instead of College. University was a title implying a learned and scientific profession, and College did not accurately express the position which veterinary science had attained. The change would also have the advantage of more clearly distinguishing between the functions of the examining and controlling body and the teaching schools, most of which took the name of College.

MR. BANISTER said that in the election of the first Fellows by the Council, clause 3 required that such Fellows should have been in practice for fifteen years. He thought that was too long a period, and it would be rather hard upon those who had been in practice within a very short period of that time to require them to work up to pass an examination.

MR. HUNTING thought that the Council's report showed a great deal of hard work in a good direction. He was surprised to find that the Council would have been glad to insert an indenture clause in the Charter. The principle of such a clause was radically bad. If a man had been in practice five or ten years before going to College, he would be more difficult to teach than one who had been in practice only one year, because he would not have so much to unlearn. During the period of assistantship or apprenticeship, the youth simply learned what a groom ought to know; such as balling horses, blistering legs, and so on. If that sort of thing had to be taught at College, he knew a horse-keeper in a large colliery who would teach it better than any veterinary surgeon in the profession. He objected to the fifteen years' practice required for the first Fellows; but no doubt, whatever time was fixed, those who fell a little sort of it would object. He was inclined to think that the time should be made a little shorter. He feared that the rule that no one should be eligible to serve as a member of the Board of

Examiners, who was not a member of the University, would exclude all medical examiners.

THE PRESIDENT.—The proposed rule would not have that effect, as it would only refer to veterinary surgeons.

MR. HUNTING said he was puzzled at some portion of the report of the Education Committee. It appeared that a man must go through nine sessions before he could get his diploma. He did not know how the subjects were to be taught at the schools; certainly fourteen or fifteen more professors would be required. He did not know how a student could finish any single subject in a session of four months. Even now, in a course of physiology it was found necessary to leave out several portions, and postpone them to the next session. The first and second sessions ran into one another, and if the student did not attend both he would miss a good deal of information. The matter would be still worse if the student only had four months. He thought that the arrangement of subjects for examination was open to some objection. The examination in materia medica in the first session was like putting the cart before the horse. It was impossible for a student to understand it until he understood pathology. In clause 14 it was proposed that the rejected student should not be eligible for re-examination until he had attended further lectures at the school at which he had been educated. He did not see why he should be debarred from going to another school if he chose, because it would make no difference to the Body Corporate, which only required that he should possess a certain amount of knowledge, it being immaterial where he obtained it.

THE PRESIDENT stated that the bye-law in question was but the renewal of an old one, and it did not require that the rejected student should go back to his original school, but that proof should be given of his having attended lectures at *the* school at which he had been educated during the interval between his rejection and his coming up again. Some of the schools had complained that some of their worst pupils had gone off to other schools. With regard to the order of the examination, the Council had consulted the principals and teachers of the schools, all of whom had approved of the scheme.

MR. GREAVES said he had always advocated the insertion of the indenture clause. During his experience he had seen many young men with diplomas setting up in business in places where there were empirics of long standing, and failing to make headway, because they could not succeed with their cases as well as the empirics themselves, being deficient in practical knowledge. The teaching at college was not all that was required; time and experience were needed to enable the practitioner to diagnose his cases correctly. He should like to see the veterinary students taught in such a way as to render their superiority over the quack self-evident. He thought it would be an injustice to ask the legislature to compel all men to put their cases in the hands of certified veterinary surgeons. If the Council and colleges, acting in concert, declared that no student should enter unless he had served three or more years' apprenticeship to a veterinary surgeon, he believed the profession would be more respected and useful than at the present time.

MR. FLEMING said that every clause in the Charter had received the earnest attention of the Council. With regard to the election of the first Fellows, it was felt that there should be a nucleus of the best men in the profession, because they would have to test those who came after as to their fitness for the fellowship; and that a less period than fifteen years' practice would hardly be a sufficient qualification for those who were to be elected without examination. It was thought to be a moderate period, neither too long nor too short, but sufficient to enable the profession to know a man's true qualifications.

MR. DRAY moved the adoption of the report.

MR. WILSON seconded the motion.

MR. WILLIAM SMITH did not like the idea of parting with the old name, but he had no doubt that the Council had given the matter deep and earnest attention, and were probably right in the views they entertained. One advantage of the alteration would be to make a better distinction between the University and the College. He thought that it was hardly desirable to use compulsion in regard to the enployment of certified veterinary surgeons. If they sought to establish their claims by superiority of education and conduct, they would gain more than by asking for any legislative enactment.

PROFESSOR WALLEY said he could understand the desire of old members to cling to the old name, but he saw no real objection to the proposed alteration. University was a higher title than college, and it would have the advantage of preserving the distinction that had long been needed. He thought that some effort should be made to prevent a man improperly using the letters M.R.C.V.S. All that was done at present was to report such cases, no attempt being made to prevent them. With regard to the first Fellows, he thought that fifteen years was too long a period. He had not himself been fifteen years in practice, and he should be sorry to submit to an examination for a fellowship; and he believed that many persons entitled in a certain sense to become Fellows would have similar objections. He also objected to the selection of the first Fellows being left in the hands of the Council. With reference to Mr. Hunting's remark, that no student could get up a subject in four months, he desired, as a member of the Education Committee, to say that such a thing was never intended. The new regulations distinctly stated that before the first examination could be passed the student must attend three terms or two sessions, winter and summer. The winter session included two terms of three months each, and the summer a term of two months, so that he must attend eight months before he could present himself. As to the subjects, Materia Medica, Therapeutics, and Toxicology, were generally mixed together, and it was almost impossible for a man to lecture upon one without touching upon the others. Materia Medica should be really confined to the qualities or characteristics of drugs, and their doses and simple uses, and viewed in that light the subject would very well come in with the final examination. Therapeutics ought, undoubtedly, to be left to the last examination, and toxicology ought also to be put in the last, or at any rate in the second. It was as important for a man to be able to detect and treat the symptoms of poisoning as it was for him to treat ordinary cases; and it was impossible for him to distinguish between a case of ordinary idiopathic disease and a case of poisoning, if he did not understand toxicology. It had been said that the examiners would be allowed to ask questions on therapeutics in the ordinary course of examination on diseases. He thought that when a subject had once been passed it should not be referred to again in an examination. It was a pity to have things mixed together as they were at present.

MR. FLEMING said it had been proposed to take toxicology at the last examination, but it was found that it would not answer. Dr. Taylor, who examined in toxicology, examined also, with Professor Voelcker, in chemistry. The two subjects were intimately allied. On the whole, it was found more convenient to have toxicology in the first examination. As it was, the last examination was a heavy one, as would be seen by the lists of subjects.

PROFESSOR WALLEY said he was not thinking of Dr. Taylor or any other examiner, but he maintained that toxicology was equal in importance to pathology.

MR. HUNTING protested against the idea of a student being examined in a subject, and then giving it up. If a student objected to a question put by an

examiner, it was very clear that he could not answer it. Materia medica ought to go in as a part of therapeutics. It was useless to examine a person upon the shape of a crystal, to the neglect of all other knowledge of a drug, especially if the idea was correct that he was not to go back to the subject.

THE PRESIDENT thought that the meeting should not take upon itself the duties of the Council in considering the details of the education scheme, but should be content with expressing a general approval or otherwise of the scheme, the main features of which were to extend the teaching to three years, and to have three examinations instead of two. With regard to the election of the first Fellows by the Council, it must be remembered that the Council was a representative body, and it ought to represent the feelings of the profession on those subjects. One-third of them now went out of office, and the meeting, having to elect members to fill their places, might be said to have a controlling influence on the election of the first Fellows. Under the system of voting papers, the control which the profession would exercise over the Council would be greater than at present, when the meeting was limited to those who could attend on a particular day in the year. With regard to toxicology, of course the details of the science would be examined into by the special examiners on that subject; but it was considered by the Council, that inasmuch as the student would be examined in the diseases of horses, including those arising from poisoning, at the last examination, though he would not be required to keep up a technical knowledge of the subject, he should keep up a fair general acquaintance with toxicology, so as to answer satisfactorily the questions on the diseases of horses. As to the fraudulent assumption of the letters M.R.C.V.S., probably the most effectual remedy would be to call attention to the fact, when it occurred, in the newspapers: this would be better than any penalty which they might have the power to enforce.

MR. LOCH said that legal proceedings in such cases would be very expensive, and uncertain in the result. A penalty could be inflicted under a charter, but only by Act of Parliament, and it was very doubtful whether such an act could be obtained.

MR. GERRARD thought that the omission of a penal clause preventing the improper assumption of the title Veterinary Surgeon was a very serious matter. The subject perhaps was not so important to gentlemen practising in large towns, or to Her Majesty's veterinary surgeons, who did not come in contact with non-professional men; but if they practised in country districts, they would no doubt change their opinion as to the desirability of a penal clause.

MR. NAYLOR said that many practitioners not possessing diplomas were thought highly of by many persons, but they often sought the help of qualified men in cases of difficulty. If the latter did their best to make themselves thoroughly proficient, their labours would be duly appreciated, and there would be no necessity for any penal clause. When quacks were prosecuted, they were very rarely convicted. He was strongly in favour of the proposed extension of time at college, but he objected to the introduction of any apprenticeship clause.

The report was adopted.

MR. GOWING moved the adoption of the Treasurer's annual balance sheet.

MR. GREAVES seconded the motion, which was unanimously adopted.

The following gentlemen were proposed as members of the Council:—

Professor Williams,	proposed by Mr. Gowing.
Mr. G. Fleming,	„ The President.

Mr. Hunt,	proposed by	Mr. Cartledge.
Prof. Pritchard,	„	Mr. Talbot.
Mr. T. Greaves,	„	Mr. Gowing.
Mr. Smith (Norwich),	„	Mr. Partridge.
Prof. Brown,	„	Mr. Gowing.
Mr. Howell (Rochdale),	„	Prof. Simonds.
Mr. Naylor,	„	Prof. Branford.
Mr. John Lawson,	„	Mr. Greaves.
Prof. Duguid,	„	Mr. Fleming.
Prof. Walley,	„	Mr. R. Ward.
Mr. Cartwright,	„	Mr. Furnival.
Mr. Batt,	„	Prof. Pritchard.
Mr. Low,	„	Mr. Boughton.

Mr. Faulkner and Mr. Furnival were appointed scrutineers.

A ballot was taken, and the numbers were as follows :—

	Votes.
Mr. Fleming	49
Prof. Pritchard	42
Prof. Williams	38
Mr. Batt	38
Mr. Greaves	36
Mr. Brown	31
Mr. Hunt	30
Mr. Walley	17
Mr. Duguid	17
Mr. Low	14
Mr. Cartwright	12
Mr. Lawson	10
Mr. Howell	10
Mr. Naylor	9
Mr. Smith	9

THE PRESIDENT declared that Messrs. Fleming, Pritchard, Williams, Batt, Greaves, and Brown were duly elected.

MR. GOWING moved a vote of thanks to the President for his conduct in the chair.

PROFESSOR WILLIAMS seconded the motion, which was unanimously carried.

THE PRESIDENT returned thanks.

CENTRAL VETERINARY MEDICAL SOCIETY.

THE ordinary general meeting of the above Society was held on April 20th The President occupied the chair. The adjourned discussion on the President's notes on Parturient Apoplexy was resumed, the Secretary reading the minutes of the same again, and also a communication which appeared in the February number of the *Veterinary Journal* on the same subject, by Mr. Lyman. In discussing it, MR. F. J. MAVOR adverted to the treatment adopted by Mr. Lyman as being based on mistaken principles, the ergot being used as an emenagogue. He found it acts on the whole of the unstriped fibres which are found in blood-vessels throughout the body: it was more applicable in treating Purpura Hæmorrhagica, in which it is almost a specific. He defined this particular affection as one of great venous congestion of the uterus. MR. H. K. SHAW was in favour of aperients and phlebotomy, also cold douches to the head; the mortality in his practice was one to six, and the attacks most frequent in the cow with the third calf.

MR. MOORE, sen., read several extracts from Veterinary Journals of 1841, illustrative of the unsuccessfulness of treatment at that time, the writers being in favour of purgatives. He had known 10 lb. of salts with 18 lb. of treacle to be given without any results. He was doubtful as to the benefit of giving aperients when the bowels were torpid; and he had observed the disease more in the cow with her fourth and fifth calf. He had not had any ill results from the retention of the membranes, which he objected to remove manually; had found the disease ushered in with shivering, and frequently observed the affection prior to calving. MR. J. WOODGER, jur., held breed to be a predisposing cause, finding the disease mostly in Alderneys; the exciting cause being plethora, especially in poor animals that had been quickly fattened: he thought Mr. Lyman regarded the disease erroneously as being always due to retention and septicæmia; whereas it was often apparent prior to calving, and also with no retention. He held it as essentially distinct from the Puerperal Fever of woman, as a disease preventing the secretion of milk. With regard to treatment, at one time he gave aperients, but now he invariably uses ammoniacal preparations, and with the best results.

The PRESIDENT, in noticing the discussion relating to the absorption of morbific matter by retention in the uterus, had not found any illresults therefrom. He always endeavoured to remove and separate the membrane in its attachment to the cotyledons. The meeting then adjourned. Present, nine Fellows.

OBSTETRICAL SOCIETY OF EDINBURGH.

AT the meeting of this Society on March 8th, there was exhibited a rhinocephalus cyclopean fœtal lamb, premature, which had been found twin with a well-formed lamb slaughtered in the shambles. It was, on the whole, of healthy natural formation, except in its head. It had not been dissected in order to verify the occurrence of the anteriorly united cerebral hemispheres. The eye and its cornea were of oval form, having the long diameter transversely. The iris was double, and the one was in contact with the other. The pupil in the middle of each iris was natural.

ROYAL AGRICULTURAL SOCIETY.

AT the Monthly Council Meeting, held on May 3rd, the Hon. W. Egerton, M.P., Chairman of the Veterinary Committee, reported that all the animals required for the scientific investigation into Pleuro-pneumonia and Foot-and-mouth disease had arrived at the Brown Institution, and that Dr. Burdon-Sanderson had expressed his belief that effectual measures had been taken to prevent their accidental infection with disease.

"THE FITZWYGRAM PRIZES."

AT a special meeting of the Council of the Royal College of Veterinary Surgeons, held March 14th, 1876, the following gentlemen were appointed examiners for the Fitzwygram prizes, viz.:—Dr. J. Burdon Sanderson, Professor Bentley, Messrs. Robertson and Finlay Dun. The second part of the examination to be held in Edinburgh.

F. N. Menzies, Esq., Secretary of the Highland and Agricultural Society of Scotland, and the Secretary of the Royal College of Veterinary Surgeons, officiated as superintendents.

The names of eighteen candidates were entered on the list; of these, five

were from the London Veterinary College, four candidates competed, and one did not appear. From the Edinburgh Veterinary College, there were three competitors. From the Edinburgh New Veterinary College, ten candidates were entered, of whom six competed, and four withdrew.

The written Examinations took place in London and Edinburgh, on Saturday, April 15th, and Monday, 17th. 1,200 marks were assigned for this Examination; candidates failing to obtain half the number of marks in any subject are excluded from the second part of the competition. The following is the result, and the number of marks obtained by each competitor.

London Veterinary College.

	300 Anatomy.	300 Physiology.	300 Pathology.	150 Chemistry.	75 Materia Medica.	75 Botany.
Mr. G. A. Banham . No. 37	248	156	243	142	59	53
,, Alex. B. Daniel ,, 36	235	182	213	100	69	48
,, Fred Smith . . ,, 39	195	110	175	40	51	20
,, G. Whitworth . ,, 34	125	68	Nil	55	38	21

Edinburgh Veterinary College.

Mr. John McFadyean, No. 22	210	195	245	148	69	49
,, Wm. Hunter . ,, 15	168	130	160	119	61	30
,, Robert Rain . ,, 18	170	84	165	91	64	32

New Veterinary College, Edinburgh.

Mr. Henry Snarry . No. 23	215	57	185	115	41	Nil
,, Jas. Sandeman . ,, 14	150	58	85	62	33	28
,, Geo. Watson . ,, 32	139	98	Nil	59	31	Nil
,, James Bell . . ,, 27	130	62	Nil	34	32	20
,, Daniel Webster ,, 28	128	71	Nil	Nil	Nil	Nil
,, Owen Coll . . ,, 26	105	0	0	0	0	0

The only competitors who obtained the half number of marks on each subject in this division of the Examination were Mr. G. A. Banham and Mr. Alex. Braik Daniel, from the London Veterinary College, and Mr. John McFadyean from the Edinburgh Veterinary College. These were consequently alone eligible for the *vivâ voce* examination, which took place in Edinburgh on May 4th, under the superintendence of Wm. Robertson, Esq., of Kelso.

The report of the *vivâ voce* and practical examination, for which 600 marks were assigned, was as follows:—

	Diagnosis of Disease.	Shoeing.	Examination for Soundness.	Selection of Horses for Specific purposes.	Total.
Mr. G. A. Banham . No. 37	185	100	175	75	535
,, Alex. B. Daniel ,, 36	140	80	175	75	470
,, John McFadyean ,, 22	170	100	170	75	515

	First Examination.		Second Examination.		
Mr. G. A. Banham .	901	+	535	=	1436
,, Alex. B. Daniel .	847	+	470	=	1317
,, John McFadyean .	916	+	515	=	1431

		Result.
1st Prize (£50) .	Mr. G. A. Banham .	1436
2nd ,, (£30) .	,, John McFadyean .	1431
3rd ,, (£20) .	,, Alex. B. Daniel .	1317

WM. HENRY COATES, *Secretary.*

May 8th, 1876.

The following were the questions in the written competition:

ANATOMY.

I.—Describe the mechanism of the *tarsal articulation* in the horse, and point out the differential arrangement of the osseous elements in this articulation in other than soliped animals.

II.—Name and describe the connections existing between the *hoof* of the horse, and the structures which it contains. What is the intimate structure of the hoof, wall, and plantar cushion?

III.—Describe the nature of the *cerebral vascular* system in the horse, and state what differences, if any, exist in the ox.

IV.—What is *epithelium?* Name and describe the different recognised varieties, and state where each of these may be found in the animal body.

V.—Give the names of the *cephalic ganglia* of the sympathetic nerve in the horse. Mention their situations, together with the sources of their afferent, and distribution of their emergent branches.

VI.—Describe the intimate structure of the *parotid gland.* What structures does it lie immediately related with on its inner surface? From what sources does it derive its blood-supply and nervous endowment?

VII.—Describe the nature of the *placental connection* in solipeds, ruminants, and carnivora, and give the minute structure of a placental villus.

VIII.—What is a *Graafian vesicle,* and what does it contain?

IX.—What is the character and mode of arrangement of the *nerve-cells* and *nerve-fibres* in the *spinal cord?*

X.—How many kinds of *papillæ* are connected with the free surface of the *lingual mucous membrane?* Describe their characters and mode of distribution; also the manner in which the nerves of taste terminate in the *gustatory papillæ.*

Time allowed, three hours.

PHYSIOLOGY.

I.—Mention in order, from without inwards, the structures (layers) which can be distinguished in cross sections of the *wall* in the horse's stomach, when examined under a low power; distinguishing in your description between parts of the organ which differ. Give the histological characters of each of the structures mentioned, illustrating your descriptions, if possible, by rough diagrams. State shortly on what structures the function of *gastric digestion* is dependent, and describe the differences relating to the distribution and arrangement of these structures, in the different domestic animals.

II.—Give a general description of a *Lymphatic Gland,* referring first to those parts or structures which can be made out by ordinary dissection, and distinguished by the naked eye. Then proceed to state how the lymphatic vessels *enter* and *leave* the organ, and describe the course of the *lymph channels* through it, and the anatomical relations of these channels to the structures which surround them. Finally, state what you know as to the *function* of the lymphatic glands.

III.—Enumerate in their order, from within outwards, the most important *structures* which are interposed between the vitreous humour and the sclerotic of the eye; and state what are the most important differences, in respect of these structures, which are to be observed between the human eye and those of the dog, ox, or horse.

IV.—Enumerate the structures which can be demonstrated in the wall of the *uterus* shortly after parturition, and state what are the structural differences which distinguish such a uterus from that of a mature but unimpregnated animal. Explain the action of the uterus in parturition, and state precisely what organs of the nervous system are essential to the process, and in what way they take part in it.

V.—Enumerate the *fœtal envelopes* of the mature ovum in solipeds, beginning from outside. State with reference to the *placenta* (1) in what respects its structure differs from the corresponding organs of the ruminants; (2) out of what earlier embryonic structure it is formed; describe the process of its formation. Distinguish the *amniotic* from the *allantoic* liquids, as regards the cavities in which they are contained, and as regards their chemical characters.

VI.—Give the characters and causes of the *first* and *second sounds* of the heart. State at what interval of time the latter is succeeded by the former in the horse. State (1) what events (movements) take place in the heart *during* that interval, and (2) what events occur during the period of time which *separates* each such interval from the succeeding one.

VII.—In what tissue or organs in the body is *Glycogen* met with, and under what circumstances? How can it be obtained therefrom in a state of purity? Compare its chemical composition and properties with those of other bodies resembling it, and state what you know as to its origin and destiny in the organism.

VIII.—Describe precisely the *movements* of the arytænoid cartilages, and of the parts immediately attached to them, in ordinary breathing, and state by the action of what muscles each movement is determined.

Time allowed, three hours.

PATHOLOGY, ETC.

I.—Define the meaning respectively of the terms *Sporadic*, *Enzoötic*, *Epizoötic*, *Panzoötic*, *Zymotic*, *Contagious*, *Infectious*, *Specific*, and *Constitutional*, as applied to disease.

II.—What changes occur in *Blood*, when effused into the structure of an organ? And what is the part which blood, when extravasated, takes in the repair of injuries?

III.—What are the points of agreement and of discrepancy between *Atrophy* and *Degeneration?* Describe the rationale of the process of *Fatty Degeneration*, and the differences between this and *Fatty Infiltration.*

IV.—What is the characteristic *product* of *Inflammation?* Is it uniform in nature, and if not, what are its varieties, and the circumstances which determine or modify these? What conditions are requisite for the organization of this *product?*

V.—How do *Specific Diseases* manifest themselves? and what is accepted as the theory of these diseases?

VI.—Describe the *post-mortem* appearances of *Rinderpest.* State the nature of the diagnostic lesions, and the situations where these may be expected to be encountered.

VII.—What is *Tuberculosis?* State its causes and manner of propagation. To what other diseased process is it closely allied? What is the nature of *Miliary Tubercle*, when examined microscopically?

VIII.—What is *Anthrax?* Mention the animals most liable to this disease, and the different forms of its manifestation. Describe the changes found on *post-mortem* examination. What is believed to be the nature of the anthrax poison, and the mode of its operation?

IX.—What are the clinical characters which confer malignancy in *Tumours* or *New Formations?* What are the distinguishing structural characters of the *Carcinomata?*

X.—What changes in physical character and appearance occur in the lung tissue during the progress of *Exudative Pneumonia?* Describe the conditions upon which those changes respectively depend.

Time allowed, three hours.

CHEMISTRY.

I.—What weight of *Sulphuric Anhydride* is obtainable from 100 lb. of sulphur?

II.—Specify, in equations, the changes which *Sugar* undergoes in the production of *Alcohol*, and the subsequent change into *Acetic Acid.*

III.—State the several characters which distinguish the *Arsenites* from the *Arsenates.*

IV.—What is the symbol for *Tartar Emetic*, and by what tests is it distinguished?

V.—What is the composition of *Cow's milk*, and the quantitative amount of its chief constituents?

VI.—How are (1) *Albumen* and (2) *Sugar* discovered in urine?

Time allowed, one hour.

MATERIA MEDICA.

I.—Give the symbol for *Chloral Hydrate*, and describe its preparation, physiological actions, and uses.

II.—How is *Citrine Ointment* prepared? and what are its uses?

III.—State the physiological actions of *Carbolic Acid, Aconite, Digitaline, Atropine, Veratrine*, and *Oxalic Acid.*

IV.—Enumerate several poisons which induce *Tetanic Spasms* in dogs, and explain the *modus operandi* of each.

V.—Specify the suitable antidotes for dogs poisoned by (1) *Arsenic*, (2) *Strychnine*, (3) *Lead Salts*, (4) *Corrosive Sublimate*, (5) *Iodine*, and (6) *Opium.*

VI.—Write prescriptions (suitable for the horse) for (1) a *Cardiac tonic*, (2) for *Oxyuris curvula*, (3) for *Diabetes insipidus*, (4) for *Gastric impaction.*

Time allowed, one hour.

BOTANY.

I.—Give in a tabular form the essential characters of the three classes of plants, viz., the *Acotyledones, Monocotyledones*, and *Dicotyledones.*

II.—Describe the structure and mode of growth of a *Leaf-Bud.*

III.—Define the following:—*Bract, Inflorescence, Spike, Umbel, Capitulum, Placenta, Ovule*, and *Seed.*

IV.—What is the *Fruit?* How would you distinguish *small fruits* from *seeds?*

V.—Describe the fructification of a *Fern.*

VI.—Distinguish between *Acrogens* and *Thallogens.*

Time allowed, two hours.

ROYAL COLLEGE OF VETERINARY SURGEONS' EXAMINATIONS.

AT a meeting of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow on April 19th, 20th, 21st, and 22nd, the following students from the New Edinburgh and Glasgow Veterinary Colleges passed their "First Examination," viz., Messrs. George Marshall, Daniel Crosbie Murphy, John Gray, and Hugh A. W. Ferguson.

The following passed their Final Examination, and received the diploma of the Royal College of Veterinary Surgeons:—

Edinburgh Veterinary College.

Mr. John McFadyean, Barrachan, Wigtonshire.
" Robert Rain, Nethertown, Castle Douglas.
" William Hunter, Blakelaw, Newcastle-on-Tyne.

Mr. George William Watson, Swanbister, Orkney.
„ George Kidney, Whitelee, Ayrshire.
„ Aimé Gautray, Mauritius, Port Louis.

Edinburgh New Veterinary College.

Mr. Daniel Webster, Riccall, Yorkshire.
„ Robert Heap Cartwright, Wolverhampton.
„ George Watson, Middlesborough.
„ James McBryde, Wigtonshire.
„ James Sandeman, Kirriemuir, Forfarshire.
„ Henry Snarry, Malton, Yorkshire.
„ James Bell, Leysmill, Forfarshire.
„ Owen Coll, Bruree, Limerick.

Glasgow Veterinary College.

Mr. John Charles Atkinson, Manchester.
„ George Campbell Hill, Bridgetown, Glasgow.
„ William Hendrie, New Prestwick, Ayr.
„ Alexander Chivas, Peterhead, Aberdeenshire.
„ William Shaw, Stranraer, Wigtonshire.
„ McNeil Marquis, Oban, Argyleshire.
„ John Currie, Ayrshire.
„ William Hopkins Mills, Ardaragh, Newry.

THE EDINBURGH VETERINARY COLLEGE.

ON April 22, a meeting was held in the Edinburgh City Chambers, for the purpose of distributing prizes to the successful students in the above institution. There was a good attendance of the students and their friends. Bailie Cranston occupied the chair, and was supported by Principal Walley, Professor Branford, Bailie Howden, Treasurer Colston, Convener Leggat, Councillors Wilson, Macknight, Macdougald, Baxter, Wellstood, Turnbull, and others. After some introductory remarks by the chairman, Principal Walley said that during the session the students had worked as energetically as it was possible for men to work—and very successfully too—in their several branches of study. This was evident from the result of the competitive examinations. The Highland and Agricultural Society were in the habit of giving yearly two gold medals—one for the best general, the other for the best practical knowledge of all the subjects connected with this particular science. These medals were open to England and Scotland. Five students had been selected from the Dick College to take part in the competitions, and the medals had been gained by two of them, Mr. John M'Fadyen taking that for the best general, and Mr. Robert Rain that for the best practical. Three of their students had been selected to compete for the Fitzwygram prizes, the value of which was £50, £30, and £20. He hoped they would carry off one of these prizes, and if they did, he would be satisfied. Their attendance during the past session had been better than they had ever had, and the behaviour had been excellent. The number of students had been larger, and indications led him to hope that there would be a considerable increase in the approaching session. The examiners had expressed their high satisfaction at the manner in which the students competing for the Dick bursaries had acquitted themselves. The Dick medals had been awarded at the close of last session, but it had been thought desirable to retain them until the students had completed their course of study. In the competition for these medals the marks obtained had been very high, and what made it even more satisfactory was to know that the examinations had extended over the whole

of the session. The following prizes were then distributed :—Anatomy—Gold medal, Robert Rain; silver medal, John M'Fadyen. Chemistry—Gold medal, John M'Fadyen; silver medal, Robert Rain. Highland Society medals—Veterinary medicine and surgery, George William Watson; cattle pathology, G. W. Watson; anatomy, G. W. Watson; physiology, J. M'Fadyen; chemistry, J. M'Fadyen; materia medica, J. M'Fadyen; botany, J. M'Fadyen. Dick Bursaries—Robert Rain, J. M'Fadyen, Mr. Hunter, and Willian Stewart Low. Principal Walley stated that Mr. Young, Edinburgh, would receive a certificate when his studies were completed for passing the matriculation examinations for the first session. Professor Branford, who is about to leave for the Cape of Good Hope, to occupy an important Government appointment, presented a box of surgical instruments to Mr. Hunter, and a prize to Mr. A. Baird. He congratulated the students on having so favourably represented the college in competitive examinations, and addressed them at some length as to their future conduct, pointing out the principles which tended to bring success and honour. The chairman also congratulated the students on the ability they had shown. He wished Professor Branford success in his new sphere of labour, and expressed the hope that for the Professor's place the Dick Trust would get a gentleman who would successfully aid in maintaining the college in that position which it had now attained. Principal Walley, in regard to those students who were leaving the college, said that it would give him great pleasure to hear that they were conducting themselves in a professional and gentlemanly manner in all their dealings. He hoped they would do their work in such a way as to make them respected amongst their brother practitioners. The professors had done for them all that they could; it was now their part to do what they could to become a credit to the Dick College and to their teachers. The professors wished them every success, and trusted they would never regret having become veterinary surgeons. Treasurer Colston said that it was gratifying to see present so many young men of promise, and still more gratifying to know of their success in the various branches of study. The results mentioned could only be obtained by great diligence on the part of the students, and by the large amount of attention and professional experience which had been brought to bear on them by those who occupied the position of professors. He moved a vote of thanks to the principal and professors for the admirable manner in which they had discharged their duties, and a special acknowledgment to Professor Branford for the services he had rendered during his connection with the institution. A vote of thanks to the chairman brought the proceedings to a close.

NEW VETERINARY COLLEGE, EDINBURGH.

THE following is the result of the competition among the students attending this College at the close of the session for the various medals :—

Horse Pathology—Dan. Webster, Riccall (medal); George Watson, Middlesborough (certificate of merit).

Physiology—Henry Snarry, Malton (medal); Jas. Bell, Arbroath (certificate of merit).

Chemistry—Henry Snarry, Malton, (medal); Jas. Sandeman, Kirriemuir (certificate of merit).

Materia Medica—Owen Coll, Limerick (medal); George Watson (certificate of merit).

Cattle Pathology—George Watson (medal); Daniel Webster (certificate of merit).

Medals given by Professor Williams for Anatomical Preparations—George Watson, Daniel Webster.

GLASGOW VETERINARY COLLEGE.

THE winter session of study at this institution terminated on April 14th, and on the 22nd the examinations of the Royal College of Veterinary surgeons were conducted within the museum of the college—Professor Turner, of the Edinburgh University, acting as president of the board of examiners, in the unavoidable absence of Professor Allen Thomson. Fourteen students presented themselves for the "pass," and four for the "first professional" examination.

The following medals, granted by the directors of the Highland and Agricultural Society of Scotland, and certificates of merit, granted by the College, have been awarded in the different branches of study :—Veterinary medicine and surgery (horse pathology) : Medallist—Mr. George Hill, Glasgow. First class—Messrs. J. C. Atkinson, Manchester ; Alex. Chivas, Peterhead ; R. M'M. Banks, Ayr ; and Duncan M'Farlane, Killin, Perthshire. Second class—Messrs. Wm. Hendrie, Prestwick, Ayr; and John Buntain, Kilmalcolm. Practical examinations of horses as to age, soundness, etc. : Medallists—Messrs. J. C. Atkinson and J. Hadden, Moffat (equal). First class—Messrs. R. M'M. Banks and Wm. Hendrie. Veterinary medicine and surgery (cattle pathology): Medallist—Mr. George Hill. First class—Messrs. D. M'Farlane, William Hendrie, J. C. Anderson, and Alex. Chivas. Second class—Messrs. R. M'M. Banks, John Buntain, and Neil Marquis. Practical examinations of cattle and sheep as to age, etc. : Medallist—Mr. John Currie. First class—Messrs. John Buntain, George Hill, and Andrew Clark. Second class—Messrs. R. M'M. Banks, J. C. Atkinson, and William Shaw. Physiology: Medallist—Mr. Alexander Chivas. First class—Messrs. George C. Hill, D. M'Farlane, Wm. Hendrie, R. M'M. Banks, and J. C. Atkinson. Second class—John Buntain, James Wilson, John Hadden, and Wm. Shaw. Best oral examination on all subjects—the (Principal's) gold medal—Mr. Alex. Chivas.

At the close of the examination, Professor Turner intimated that the Council of the Royal College of Veterinary Surgeons had resolved, at a recent meeting, to confer an honorary degree upon all students who distinguished themselves to the extent of passing a first-class examination on all the subjects and at all the tables ; and as Mr. Chivas had done so, this fact would be duly notified to the Council in London. Mr. Chivas is the first and only student who has as yet obtained this high distinction in Scotland.

ONTARIO VETERINARY COLLEGE.

Result of Annual Examinations.

THE examinations of the students attending this college were recently concluded. During the past session there has been a considerable increase in the attendance. The benefits of this institution to the agricultural community are being more fully appreciated by the farmers, and the success of its graduates is the best indication of its usefulness. Last session the Ontario Legislature granted $2,000 to the Agriculture and Arts Association for the purpose of establishing a veterinary museum and library, to which the students of the college will have access. Below is the result of the examinations. The Board of Examiners are Drs. Thorburn and Barrett, Toronto ; Messrs. E. T. Hagyard, V.S., Winchester, Kentucky ; A. O. F. Coleman, V.S., Ottawa ; W. Cowan, V.S., Galt ; J. H. Wilson, V.S., London ; J. T. Duncan, V.S., Goderich ; J. Cæsar, V.S., Port Hope ; J. Lloyd, V.S., Newmarket ; R. Robinson, V.S., Tullamore ; C. H. Sweetapple, V.S., Brooklyn.

The following passed a successful examination, and were awarded the Diploma of the Council of the Agriculture and Arts Associaton, viz. :—John Beatty, Cobourg; Alfred Russell Colman, Port Dover; Harry C. Doan, Rogerville; William Alex. Dunbar, Florence; Andrew Gunn, Beaverton; Thomas Andrew Morrison, La Salle, N.Y.; John Standish, Georgetown; William W. Stewart, Sandhill; Ezekiel Tennent, Birr; Christopher Taylor, Hornby; William Gibb, St. Mary's. John R. Ross passed a primary examination on anatomy.

The following obtained honours or prizes :—

Anatomy.—Junior Class—George Bates, Wellington, Lafayette County, Missouri, silver medallist; R. Newton, Belleville; David Stovel, Mount Forest; A. Harding, Kingston, Jamaica; Geo. McEvers, Cobourg, prizemen.

Physiology.—Andrew Gunn, Beaverton, honours; John Standish, W. A. Dunbar, T. A. Morrison.

Chemistry.—Senior Class—W. A. Dunbar.

Chemistry.—Junior Class—W. A. Harding.

Materia Medica.—W. A. Dunbar, first prize; Messrs. Beatty, Morrison, and Colman, honours.

General Examination.—John Standish, silver medallist; Messrs. Dunbar, Tennent, Colman, and Morrison, honours.

The following received certificates of regular attendance :—Messrs. H. Doan, W. A. Dunbar, John Standish, J. Beatty, W. W. Stewart, A. Gunn, E. Golding, A. R. Colman, C. Taylor, J. B. Wright, T. A. Morrison, E. Tennent, J. R. Ross, W. Gibb, E. Kenning, R. M. Somerville, W. Langtry, A. Harding, H. Hamilton, R. Newton, G. W. Bates, R. Davis, H. Hopkins, G. McEvers, D. Stovel, S. Rogers, A. Stephenson, F. W. Matthews, J. Stephens, J. S. Anderson, M. S. High, M. McKillop, T. Hagyard, H. E. Poole, G. B. Holmes.

Among the visitors present were Messrs. J. P. Bond, V.S., Toronto; J. Cæsar, V.S., Oshawa; T. B. Hillock, V.S., Uxbridge; J. S. Hughes, V.S. Schomberg; T. Hodgson, V.S., Toronto; W. Somerville, V.S., Buffalo, N.Y.; O. Neil, V.S., London; E. A. Grange, V.S., Guelph; Mat. Younge, V.S., Stayner; T. Welsh, V.S., Clinton; J. H. Tennent, V.S., London.

Mr. Coleman, Ottawa, in presenting the prizes to the successful students, expressed his satisfaction at the result of the examinations, and the proficiency of the students. In handing the silver medal to Mr. Bates, who comes from Missouri, he referred to the pleasure it gave him that one from the other side had been the first in the anatomy class of first-year students. Several graduates of the school had become very successful in the States, and a number of American youths had come here specially to avail themselves of the advantages of the Ontario College. He also alluded to the ability of Professor Smith, and the success which had attended his efforts in promoting veterinary science in this country.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE final meeting for the present session was held on March 30th, at the Veterinary College, the President, D. McEachran, M.R.C.V.S., in the chair. Messrs. Vray, V.S., Boston, and Lyman, V.S., Springfield, Mass., who were proposed at last meeting, were balloted for, and unanimously elected members. Mr. C. C. Lyforce was elected librarian for the summer. A cordial vote of thanks was passed to the press for their liberality in publishing the reports of the meetings during the session.

Mr. A. O. F. Coleman, V.S., Ottawa, was then called upon to read his paper on "Ventilation." The importance of the subject, and the very instructive manner in which it was treated, made the paper a very interesting

one. Mr. Coleman exhibited several diagrams of different methods of ventilating stables and public buildings. A very lively discussion ensued on the respective advantages of the different plans. Mr. Coleman argued in favour of admitting the air by an outside shaft on each side of the stable, opening close to the ceiling, and a central exhaust shaft for the escape of heated impure air.

Mr. J. C. Baker, who was present as a visitor, recommended the admission of air by a wooden box opening at each end of the stable, passing along the wall close to the ceiling and in front of the horses, with moveable slates, so arranged that the current of air would be delivered upward, and in addition to have a shaft opening through the roof (in a double stable in the centre, in a single one near the wall, behind the horses).

Mr. Sermon contended for admitting the air through openings guarded by grates and slides, a little above the level of the floor, in front of each stall.

This was objected to by most of the speakers, on the ground that, in our variable and severe climate, it exposes the horses to drafts.

The President pointed out one difficulty which interfered with the application of most plans of ventilation proposed, especially in the city. Most stables were placed at the extreme end of the lot, adjoining other stables and buildings at the ends, and usually on the division line, so that the rights of proprietors prevented openings to be made in the main wall. Consequently both light and ventilation had to be obtained in the same wall. Hence, in building city stables, we were compelled to ventilate according to circumstances. He thought when openings could be made in the wall over the horses' heads, with iron gratings or slides, with a centre shaft or shafts in the middle of the ceiling, opening through the roof, it was the best system. But where openings could not be made in front, large shafts divided in four compartments, so as to obtain a current of air from all quarters of the wind, the windows being swung on pivots, or made to open as suggested by Mr. Coleman, or Walsh's plan. There would be no difficulty in obtaining a supply of pure air. Builders, as a rule, make the shafts too small. A stable thoroughly drained is more than half ventilated; no matter how perfect the one may be, without the other it is comparatively useless.

EXAMINATIONS AT THE MONTREAL VETERINARY COLLEGE.

THE examinations of this College, which were concluded on March 29th, were of a very satisfactory nature, some of the students having attained a degree of proficiency seldom met with hitherto among the students of this profession.

The examination for first-year students in Botany, and second-year students in Chemistry and Physiology, were conducted by the Professors of McGill University, the same as the Medical, some of them in each class receiving a high percentage of marks both in written and oral examinations. The final examination of third-year students was held at the Veterinary College during Monday, Tuesday, and Thursday of this week; on the two former days by written examinations, and on Thursday an oral examination by a full Board of Examiners, appointed by the Council of Agriculture, consisting of the following gentlemen:—Hon. Dr. Beaubien, Dr. Tetu, Dr. Geo. Leclerc, A. Waddel, M.R.C.V.S., Geo. Sermon, M.R.C.V.S., William Patterson, M.R.C.V.S., F. A. O. Coleman, V.S., Archibald McCormick, V.S., Chas. Levesque, V.S., J. B. Chevallier, V.S., C. J. Alloway, V.S., A. Somerville, Esq., and S. N. Blackwood, Esq., members of the Council of Agriculture; the professors of the College and other friends being present as spectators. The following is the result:—

In Botany, eight presented themselves; seven passed, viz.: F. W. McLellan, Bridgeport, Conn.; M. C. Baker, Dunham, P.Q.; C. D. Bancroft, Knowlton, P.Q.; C. C. Lyford, Roscoe, Illinois, United States; George Tate, Allan's Corners, Chateauguy, P.Q.; M. L. Cannon, Montreal, P.Q.; William P. Mullin, Montreal, P.Q.

In Chemistry, six presented themselves; all passed, viz.: James N. McLaughlin, Watertown, Mass., United States; C. C. Lyford, Roscoe, United States; John F. Ryan, Montreal, P.Q.; Wm. G. Hall, Leeds, Megantic, P.Q.; Serbil Herbert, Napierville, P.Q.; Wm. A. Murphy, Boston, Mass., United States.

In Physiology, five went up and passed, viz.: James N. McLaughlin, Watertown, Mass., United States; John F. Ryan, Montreal, P.Q.; Wm. A. Murphy Boston, Mass., United States; Wm. G. Hall, Leeds, Megantic, P.Q.; Serbil Herbert, Napierville, P.Q.

The final examination comprised Veterinary, Anatomy, Veterinary, Medicine and Surgery, including the diseases of horses, cattle, sheep, and dogs, and Veterinary Materia Medica. Six went up, and after a searching examination on all the subjects succeeded in passing most creditably, and were admitted as members of the profession, viz.: Austin H. Baker, Dunham, P.Q.; Vital Provost, Ste. Sebastian, P.Q.; Thos. Blackwood, West Shefford, P.Q.; Jedde C. Fogg, Boston, Mass.; John C. Mulloy, Boston, Mass.; Oliver C. Farley, Chelsea, Mass.

The competition for prizes by written examinations resulted as follows:—

First prize, silver medal, the gift of the Council of Agriculture, P.Q., won by Austin H. Parker; 2nd prize, won by Vital Provost; 3rd prize, won by Thomas Blackwood. Honourable mention—Jedde C. Fogg. Second-year students: 1st prize, C. C. Lyford; 2nd prize, John F. Ryan. Honourable mention—Wm. H. Hale. Messrs. McLaughlin and Lyford were specially complimented by the examiners on the high percentage of marks they attained, the former in Chemistry and Physiology, the latter in Chemistry—not having been examined in Physiology.

Alexander Waddel, M.R.C.V.S., Quebec, on presenting the prizes, addressed the new graduates, complimenting them on their success, and urging on them not only the desirability, but the absolute necessity, of continuing their studies after leaving college; urged them to be honourable and upright in all their dealings, and aspire to high positions, knowing that their individual success will aid in the elevation of the whole profession.

Mr. Coleman, V.S., Ottawa, followed in a few well-chosen remarks, complimenting them on the result of the examination, which showed a degree of proficiency highly creditable to themselves and teachers. He congratulated Professor McEachran on the progress of the College, the excellent College builings, the large and valuable collection in the museum, and the suitableness of the dissecting-room, infirmary, etc., for imparting instruction in all branches of the science.

Dr. George Leclerc, Secretary of the Council of Agriculture, in presenting the diplomas, hoped that the possession of them would stimulate them to further progress. He referred to the great satisfaction the Council always had in everything connected with the Veterinary College, managed as it was by Professor McEachran, who took such a deep interest in this most useful science which he represents, loves so well, and teaches so successfully.

Professor McEachran entertained the examiners and graduates, and a few other students, at dinner. Among the toasts of the evening were "The Successful Graduates," to which Mr. Austin H. Baker replied; "The Examiners,"—Mr. Waddel, Professor McEachran and Professor Smith; "The Ontario Veterinary College," to which Mr. Coleman replied; "The Council of Agriculture," Mr. S. N. Blackwood.

Parliamentary Intelligence.

HOUSE OF COMMONS, APRIL 28TH.

Army Veterinary Surgeons.

Mr. STACPOOLE asked the Secretary of State for War whether he was now prepared to state what steps had been taken with reference to an assimilation in the future of the officers of the Chief of the Army Medical Department and Permanent (Principal?) Veterinary Surgeon, with the view of putting an end to the stagnation of promotion in Her Majesty's Veterinary-Surgeon Service.

Mr. HARDY stated that Mr. Wilkinson has been fifty years in the service, and Principal Veterinary Surgeon since 1854. His retirement is in progress, and application is on the point of being made to the Treasury for a special pension for his long service. In the future a different tenure of Principal Veterinary Surgeon will be established.

Jurisprudence.

VETERINARY OBSTETRISTS.

[THE case alluded to below, the brief newspaper report of which was given in our last impression, is so important to veterinary obstetrists, that we willingly give insertion to the following notes forwarded to us for publication by T. D. Broad, M.R.C.V.S., Bath. To be defendant in a case of *malpraxis* is always very serious, both for medical men and veterinary surgeons, even when the result of the trial is complete exoneration from the charge. When, however, the verdict is against the practitioner, then indeed it is a grave misfortune for him; entailing, as it does, not only all the expenses of the suit, perhaps, but, in the majority of instances, utter loss of professional reputation in the locality in which he practises—a loss equivalent to ruin. It is well, therefore, that veterinary surgeons should closely scan and treasure in their memory the facts which incline juries and judges to pronounce an opinion adverse to any of their colleagues in such cases. What is the misfortune of one to-day may be that of another to-morrow. And the fact must not be lost sight of, that professional witnesses incur a larger amount of responsibility in these than in other law-suits, and their evidence must be looked at from a professional standpoint, and not altogether from that of the jury-box; so that we need not wonder if, occasionally, it is anxiously examined and discussed. We make these remarks without the slightest reference to this particular suit, but in the best interests of the profession and the public.]

In the *Veterinary Journal* for May, there is a report (but a very poor one) of a trial—Prout *v.* Paradise. As the trial is one of importance to the profession, I beg to report more of the evidence from a copy of Counsel's notes.

Professor Pritchard stated that it can be easily ascertained whether a foal be alive or dead, without passing the hand up the vagina, which is not right, and is very dangerous. If the foal be coming backward, no force should be used until both hind legs be got into the passage, and then force may be applied; but he would give the mare a chance to relieve herself first. In long foaling, the mare should be supported with brandy or nitric ether, or any suitable stimulants. Whether the foal was alive or dead, assuming plaintiff's account to be true, defendant did not act properly: uneasiness and rolling is inconsistent with pains of labour—it indicates "Gripes." In

labour, mares will get up and down once in a quarter of an hour; straining is an unmistakable symptom to those acquainted with foaling; mares may strain up or down. This was a one hind-leg presentation. Efforts should be made to push the foal forward, and get the other leg; if you could not do that, remove the one presented. It should be done with an embryotomy knife with sliding blades, by dividing the skin as high up as the hand can reach in a longitudinal direction to the foot; then skin the leg; it is most important that it should be divided as high as the hip; I have never met with a case where that was not possible; no use removing it elsewhere; not proper to use a clasp-knife. Cannot fix any time; that must depend on size of mare: should have waited longer in this case to let the mare deliver herself. Not being able to put the hand up would show that the mouth of the womb was not sufficiently dilated; dilatation of the womb would be a sign of labour. If second leg could not be found, the one presented should be removed at the hip; if he could not do it, some one else should be called in. When the foal is very large, or unusually presented, there is justification for using great force.

J. A. McBride agrees with Professor Pritchard that it can be easily ascertained whether the foal be alive or dead; and when mare is in labour, no force should be used until labour has been on some time. It was improper to put hand up the vagina on the first occasion. Mare should be allowed several hours for parturition in natural way. If labour is far advanced, examination was proper. Don't know any fact showing colt alive, excepting defendant's alleged statement. I agree with the whole of Professor Pritchard's evidence.

John Blunsdon, of Cirencester: I agree with Professor Pritchard, except that it is more difficult to divide a leg at the hip than he states; it ought, if it can be done. On cross-examination, was asked how he would have got the foal away, it being a breech presentation, and the passage very small. "If I could not get the second leg up, I should fix a crook in the anus of the foal, so as to fix it; then put in a knife, and divide across the loins, and remove what portion I could by knife and force; and should take out the intestines—you can always reach them. The remainder would then come away easily. If that was done which I have mentioned, it would be an exercise of fair, reasonable, and ordinary skill."

Professor Pritchard admitted that he had not seen a similar case for sixteen years, which was a longer time than he had been a member of the profession; and as Professor McBride's practical experience has been much the same, would it not have been much more discreet on their part to have avoided going into the witness-box, and giving evidence on a subject with which they had had very little or no practical acquaintance? Judging from the evidence of Mr. Blunsdon, the same remarks will apply to him.

Army Veterinary Department.

Gazette, May 2nd.

4th Hussars.—Veterinary Surg. of the First Class T. Paton, from the Army Service Corps, to be Veterinary Surg., vice Veterinary Surg. of the First Class H. Sewell, who exchanges.

Army Service Corps.—Veterinary Surg. of the First Class H. Sewell, from the 4th Hussars, to be Veterinary Surg., vice Veterinary Surg. of the First Class T. Paton, who exchanges.

May 16th.

Staff Veterinary Surg. W. Thacker retires upon half-pay.

XUM

Gazette of India, March 29th.

ARMY REMOUNT DEPARTMENT.

Staff Veterinary Surg. W. Thacker to be Remount Agent at the Presidency.

Veterinary Surgs. G. Kettlewell and E. J. Batt to be Veterinary Surgs. in charge of Reserve Remount Depôts.

H. E., the Gov.-Genl. in Council is pleased to make the following appointments, subject to the approval of the Right Hon'ble the Secy. of State for India :—

Horse-Breeding Operations.

Inspecting Veterinary Surg. J. H. B. Hallen (Bombay Estab.) will, until further orders, be employed under the Govt. of India as Genl. Supt. of Horse-Breeding Operations.

Veterinary Surg. W. Boyd to be Assist. Supdt., Horse-Breeding Operations.

13th Hussars.—Veterinary Surg. F. Garrat, to Bombay, for one month, from date of availing himself of it, to appear before a medical board. Veterinary Surg. J. Hamond has been appointed to take charge of the regiment.

15th Hussars.—Veterinary Surg. W. Walker, to England, per troopship, from date of embarkation, to appear before a medical board. Veterinary Surg. C. W. Gillard, Indian Veterinary Department, has been appointed to take charge of the regiment.

Veterinary Surg. J. W. B. Skoulding, R.A., from Saheranpore Stud to Peshawur.

Veterinary Surg. T. J. Symonds, R.A., Peshawur, to Meean Meer.

Veterinary Surg. J. J. Meyrick, R.A., from Bareilly to England on leave.

Veterinary Surg. R. F. Frost from Meean Meer to Mooltan.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

Gazette, April 25th.

William Chambers Lawson, M.R.C.V.S., has ceased to be an inspector of the Privy Council for the purposes of the above-mentioned Act from the 13th April, 1876.

Notes and News.

HYDROPHOBIA IN GERMANY.—We learn that a very extensive and serious outbreak of Rabies, epizoötic in its nature, has recently occurred in Middle Franconia, Bavaria. It is stated that about fifty persons have been bitten in a short space of time by mad dogs.

HORSE-FLESH.—The horse meat establishments in Paris delivered for consumption during the past year 6865 horses, asses, or mules.

WHITE VEAL.—We are gratified to observe that the stupid and cruel practice of "bleeding" calves to make their flesh white—though it makes it much less nutritious—is being gradually suppressed by the Royal Society for the Prevention of Cruelty to Animals. At Liverpool a recent conviction establishes the fact that magistrates look upon such a reprehensible custom as within the purview of the law, and that it is doomed to disappear at no very distant date. The practice is often carried out with the utmos barbarity by the most brutal of men.

VETERINARY SURGEONS IN FRANCE.—The number of Veterinary Surgeons who graduated in France in 1875 was: from Alfort 70; from Lyons 25; from Toulouse 41: making a total of 136. At the cavalry school, forty candidates were admitted as probationary Army Veterinary Surgeons, after having submitted to the competition held in October.

HYDROPHOBIA.—Dr. O. De-Stefano, in the *Gazzetta Medica Italiana* for 1875, relates three instances of persons bitten by the same rabid dog. The first case was that of Napolitano Rosa, a man about sixty years old. Holding up his right hand in a vain effort at self-protection, the rabid brute bit him severely on the back of the hand. De-Stefano was fortunately in the apothecary's shop where the bitten man had at once applied for relief. De-Stefano immediately had recourse to pledgets of lint dipped in liquid ammonia, having first washed the wound thoroughly. When they became dry, other pledgets, similarly moistened with liquid ammonia, were substituted for the first. In ten days the wound was quite healed.

The second case was that of Antonio Capiraso, about ten years old, bitten by the same dog in the left leg as the animal was rushing along the same street. Dr. De-Stefano treated the boy precisely as he had treated the man, and with a like result.

The third case was that of Teresa Napolitano, a widow of sixty, who was also bitten by the same rabid animal. The poor woman, unaware of her great peril, sought for no advice or treatment, and consequently received none. After the lapse of six months, symptoms of hydrophobia, as well marked as possible—symptoms which it is needless further to particularise—appeared. On the 1st of October, preserving her intelligence to the last, but suffering most acutely, the poor woman perished.

DECREASE OF STOCK IN QUEENSLAND.—According to the report of Mr. Gordon, chief inspector of stock in Queensland, the number of sheep had not only not increased during the year 1874, but was positively less in that region of Australia by 39,242 than in 1873. Allowing for the increase which might have been expected, the inspector considers that a gross decrease of 738,413 has taken place. Against this must be set an export of 418,291; the number absorbed by the population is set down at 300,000. Importations during the year amounted to 298 sheep by sea, and 10,291 over the border; showing a decrease on the receipts of former years. The demand for long-woolled sheep on the Darling Downs is said to be supplied for the present; and as regards merinoes, local men show a strong disposition to stick to those of Queensland origin, instead of importing stud sheep from other colonies. The lambing season shows some very low averages: the general average was only 50 per cent., the highest 85, and the lowest, which was returned from several parts of the colony, was 24. Losses from death amounted to no less than 8¼ per cent. A good proportion of these deaths are said to be attributable to worm disease, which had been unusually prevalent, and which was to be one of the subjects investigated by a board proposed to be appointed. It appears that a notion has got abroad that the kangaroos, which are overrunning large tracts of the country, are the means of spreading the worms which have proved so injurious to sheep; and it is noted that these worms infest the kangaroos in the same manner as fluke; but it is asserted that the total destruction of these marsupials would not render the land sound for sheep, unless live stock of every description were kept off it for several years. The most serious charge against the kangaroos is their uselessness. They consume pasturage sufficient for an equal number of valuable sheep; and they give nothing in return but their skin. The cause of their large increase is not well ascertained, but it seems certain that the destruction of the native dogs or "dingoes" has much to do with it, as well

as the infrequency of bush fires; but it is believed that the "disappearance" of the aboriginal native is the principal reason. Owners of "runs" have in some instances been obliged to keep back the intruders by erecting paling fences; and close fencing will soon become necessary upon farms in certain districts, if the crops are to be secured to the grower. It is proposed to legislate against the kangaroos as was done with so much success in the case of the rabbits in Tasmania: the skins are expected to defray the costs of working the Act.

STOCK IN THE UNITED KINGDOM.—The Agricultural Returns for 1875, just issued, show the following results as regards the number of each kind of live stock in the United Kingdom. With respect to horses—as only the number of such as are used for agriculture and of young and unbroken horses can be ascertained for Great Britain through these returns—the number of other horses until lately subject to licence duty in Great Britain must be added in order to obtain an aggregate of the stock of horses in the kingdom; which, computed in this way, would amount to about 2,790,000, of which about 2,264,000 belonged to Great Britain, including the islands, and 526,000 to Ireland. The total stock of cattle of all ages in the United Kingdom was 10,162,787, of which Great Britain with the islands possessed 6,050,797, and Ireland 4,111,990. The total stock of sheep and lambs in the United Kingdom numbered 33,491,948, of which 29,243,790 were in Great Britain and the islands, and 4,248,158 in Ireland. The total number of pigs was 3,495,167, of which 2,245,932 were in Great Britain and the islands, and 1,249,235 in Ireland; but the pigs kept in towns and by cottagers are not included in the returns for Great Britain. The increase in the number of horses which continues of late years is not, as pointed out in the report accompanying the returns, to be observed in the class returned as used solely for purposes of agriculture. This class of horses in Great Britain has only increased between 1871 and 1875 from 939,000 to 951,000, showing an increase in the five years of 12,000, or at the rate of little more than 1 per cent. In Scotland during the same period the number of horses used solely for agriculture has slightly increased. The chief increase in the number of horses in Great Britain, so far as returned, occurs in the class of mares kept for breeding and of unbroken horses. The number of this class in 1875 was 388,000, against 367,000 in 1874 and 314,000 in 1871. So that between 1871 and 1875 there has been an increase of chiefly young horses of 74,000, or 23 per cent. The total number of horses in Ireland was about the same in 1875 as in 1874. Foreign horses are now brought to this country in rather considerable numbers, owing no doubt to the high prices to be obtained for them. The imports of horses numbered 12,618 in 1872, 17,822 in 1873, 12,033 in 1874, and 23,390 in the first ten months for 1875. Against these imports the exports of British horses numbered 3,389 in 1872, 2,816 in 1873, 3,050 in 1874, and 2,791 in the first ten months of 1875. While in point of number the imports of horses exceed the exports, the average value, according to the trade returns for 1875, was twice as much for the English horses exported as for the foreign horses imported, or £77 against £37 per head.

WHAT IS IT?—A correspondent informs us, states the *Canadian Gentleman's Journal*, that Mr. James Wright, of the Paisley Block, near Guelph, has lost four valuable horses by a disease which the veterinary surgeons thereabouts do not appear to be able to account for, explain, or treat successfully. The symptoms are an extension and enlargement of the tongue on one side of the mouth, and then a desire to lie down. When the animals once lie down it is impossible to get them up again, and so far no remedy has been discovered for the disease, which appears to be quite new, and unknown to veterinary doctors.

MILK.—The *Journal des Connaissances Médicales* has the following curious items concerning milk :—From the physician Nicandier down to Dr. Tardieu, that vital fluid has always been considered an antidote to all known poisons ; and yet an inquest was held at Manchester a short time ago on the death of an infant two days old, that had come into the world in excellent condition, but had been found dead in its cradle on the second day, and it transpired that the mother indulged in opium to an extraordinary degree, her husband affirming that she used to take at least an ounce per week, and that he had latterly provided her enough to last her six months. The medical man who attended attributed the death to the poison contained in the mother's milk, and the jury returned a verdict accordingly. Here the editor of the journal, Dr. Cornil, justly observes that the child must have experienced the effects of the drug during the whole of its fœtal existence, and that, consequently, the little milk it took after birth could hardly be the cause of death.—A bowel complaint having assumed an epidemic form in the environs of Rome, the local physicians suspected goats' milk to be the cause of it. The animals were examined and found healthy ; their milk was analysed and no poisonous substance discovered in it. At length suspicion fell on the pasture afforded to the goats, and this was found to contain four poisonous plants—viz., Clematis vitalba, Conium maculatum, Colchicum autumnale, and Plumbago Europœa. This led to a second testing of the milk ; and this time colchicine was detected in it. Montbrun-les-Bains, in the Drome, is celebrated for nurses, who continue to give the breast for two years and more. When one of these women loses her nursling she takes a puppy-dog instead, which then becomes one of the family. Now it has been observed that all such dogs become ricketty. This has led Dr. Bernard to conclude that woman's milk was deficient in some principle contained in dog's milk, and that consequently the latter might be a cure for the rickets, and an observation published by him would seem to confirm that view.

STOCK IN OUR COLONIES.—The Agricultural Returns recently issued tell us that the stock of horses in all the Australian colonies numbered, according to the returns, 868,000 in 1875 against 700,000 in 1870—which figures show an increase in four years of 168,000 horses, or at the rate of 24 per cent. New South Wales heads the list with 347,000 horses, and Victoria comes next with 180,000. For the Cape of Good Hope the number of horses returned in 1865 was 227,000 ; and for the Dominion of Canada 837,000 horses were returned in 1871. As regards cattle, the stock continues to increase in the Australian colonies, the total number according to the last returns (generally for the year ending the 31st March, 1875) having reached nearly six million head, which is about 235,000 more than in the returns for the previous year. Nearly one-half of the stock of cattle, or 2,857,000 head, belonged to New South Wales. Queensland stands next, with 1,343,000 head, and then Victoria, with 959,000. The returns from colonies in other parts of the world show that Natal, in 1874, had a stock of cattle numbering 501,000 ; the Cape of Good Hope, in 1865, 692,000 ; and the Dominion of Canada had 2,624,000 head of cattle in 1871, against 2,256,000 in 1861. In Canada, therefore, the stock of cattle increased 368,000, or by 16 per cent., in the ten years from 1861 to 1871. The agricultural wealth of some of the colonies, especially in Australia, is more marked in the number of sheep they possess than in that of any other kind of live stock. The aggregrate stock of sheep in all the Australian colonies in the year 1874 amounted to no less a number than 61,650,000, which exceeds the number for the previous year by 3,600,000, or 6 per cent. Of the large total just mentioned, about 23 million sheep belong to New South Wales ; rather more than 11 million each to Victoria and New Zealand ; and South Australia and Queensland own re-

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spectively from 6 to 7 million. The increased commercial wealth derived by the Australian colonies from their flocks of sheep is shown by the extent of the imports of Australian wool into the United Kingdom. In the last three years—1873, 1874, and 1875—these imports amounted to 186 million, 225 million, and 239 million lbs. weight, of the value of nearly 12 million, 14 million, and 16 million pounds sterling. The number of sheep in the Cape of Good Hope colony was nearly 10 millions in 1865; and as the imports of wool into the United Kingdom from the Cape have increased, the number of sheep in that colony must be now larger than in 1865. The number of sheep in the Dominion of Canada was 3,155,000, according to the returns for the year 1871, against 2,400,000 in 1861. The supplies to this country of preserved meat from Australia continue to be smaller in quantity than they were in 1872.

RELATIVE VALUE OF FOODS.—An American paper gives the following estimate of the relative nourishing qualities of various foods for cattle:—Taking timothy hay as a standard of comparison, it requires 100lb. of it to supply a certain amount of nourishment. It is estimated, by a careful experiment, that the same amount of nourishment can be obtained by using the following quantities of food:—Clover hay, 95lb.; rye straw, 335lb.; oat straw, 220lb.; potatoes, 195lb.; carrots, 280lb.; beets, 346lb.; ruta bagas, 262lb.: wheat, 43lb.; peas, 44lb.; beans, 46lb.; rye, 49lb.; barley, 51lb.; corn, 56lb.; oats, 59lb.; buckwheat, 64lb.; and oil cake, 64lb.

HIPPOPHAGY IN PARIS.—About 3,122,000lbs. of horse, ass, and mule flesh have been sold for human consumption in Paris by the butchers there who deal in that commodity, during the past year. The number of the above animals killed to produce this amount of meat was 6,865.

PECULIAR MARES.—A correspondent of the *Times of India*, Mr. Fernandez, who is temporarily in charge of some breeding stables in Kattywar, writing of a particular race of mares there, called the Pirani Tagan, describes the singular manner in which the unnatural propensity common to these mares of refusing to suckle their young is overcome. It appears that, the duties of the writer throwing him much among the horse-breeders of the district, whom he speaks of as men of no mean capacity, he had often heard from them of a sudden aversion that these mares sometimes display to their offspring, causing them obstinately to refuse to allow their young even to approach them. The breeders further stated that an unfailing remedy for this unnatural defect in the dam was to sacrifice a goat the instant the foal was dropped, and allow the dam to drink the blood and eat as much of the flesh as she liked. This sounded so incredible that Mr. Fernandez looked upon it as a mere fable, till he very recently came upon what he considers a verification of the superstition. He states that—"In the breeding stables of the Bhownuggur Durbar there is a Pirani Tagan mare, which was one of the animals presented early last year to our Thakore by the Gondul Durbar, on the occasion of his marrying a daughter of the house of Gondul. This mare, it seems, has foaled twice at Gondul, but on both occasions killed her young by persistently refusing to suckle it. Shortly after her coming here she was covered by Merry Dance, a Government stallion, and some six months ago she gave a foal. The employés of the breeding stable here, being wiser in their generation than those of the Gondul, had prepared themselves for this expected event, and as the mare dropped the foal a goat was at once sacrificed to subdue nature. It seems she eagerly drank up all the blood offered to her, and ate about a pound of the raw flesh. After this sanguinary repast of hers, the foal, which had in the meantime been taken away from her, was brought back to its dam, and the men were quite rejoiced to see her treat the little thing with maternal care and affection. You may imagine how astonished I was to hear this

story related to me in the most circumstantial manner while standing near the wonderful mare herself. No amount of questioning or cross-questioning was able to shake the statements of the men, whom I cannot accuse of trying to play on my credulity; for I tested the truth of this story by examining some of them individually on subsequent occasions." These mares are, it appears, noted for their spirit. This quality is, perhaps, rather superabundant in them than otherwise.

EQUINE ENTOZOA.—A lecture was recently given at the Agricultural Club in Berlin, on a recently-discovered parasite of the horse, the *Strongylus armatus*. Careful examination, which has taken place at the Veterinary College, Berlin, shows that about ninety-four per cent. of all horses are more or less infested with this hurtful parasite. The *Strongylus armatus*, whose mouth (when the parasite is of full growth) is provided with sharp prickles, which facilitate a speedy piercing of the skin, passes through a triple stage of development. The eggs laid in the colon, the abode of the fully-developed animal, are carried out with the excrements, and pass from thence to the stages of embryo and larva. This larva is brought, in a manner which has not hitherto been explained, again into the horse, and establishes itself firmly in the foremost mesenteric artery, but wanders, after attaining full development, into the colon. Here coition takes place, and the course begins *de novo*. While in the mesenteric artery, the *Strongylus armatus* is, in the first place, the cause of aneurism or dilatation of the artery, and in the second place produces Thrombi—clots of coagulated blood—which often attain such dimensions that the artery is completely stopped up, or that pieces detach themselves from them, which, on their part, likewise lead to obstruction. In both cases the horse dies of colic. Unfortunately, no curative remedy has yet been discovered.—*Land and Water.*

Obituary.

The death is announced of Mr. Edward Stanley, of Birmingham, a gentleman well and worthily known, not only in the Midland Counties, but beyond their limits. Though he became a member of the profession so long ago as 1829, and might therefore be designated by the more recent graduates as one of the old school, yet he was not of those who oppose progress, and fancy that the science and education of fifty years ago are good enough for the present or for all time. His genial disposition and marked unselfishness had secured him a wide circle of friends, to whom he will be long remembered as an honest man and a worthy member of the veterinary profession.

We have also to record the decease of Mr. R. Hardy, of Grantham, Lincolnshire, who graduated in 1837.

Correspondence, etc.

THE ETIOLOGY OF "MILK FEVER."

To the Editor of the VETERINARY JOURNAL.

SIR,—In the *Journal* for March there is an article upon the above subject, in which one "Scrutator," by means of certain questions which he evidently considers to be unanswerable arguments against it, decides for us that the theory of septic poison being the cause of "Milk Fever" in cows "won't hold water"—euphonious metaphor! and goes on to say that the theory

based upon the "suspension of the secretion of milk" is good enough for him; therefore, the inference is it is good enough for all. With your permission, Mr. Editor, and with as little encroachment upon your valuable space as possible, I shall endeavour at the same time to answer, so far as I am able, the various questions of your correspondent, and to give clearly the reasons for the conclusions arrived at.

1st. I am asked to "explain the rapidity of the putrefactive process in a case where the pathognomonic symptoms of "Milk Fever" are fully developed four hours after calving . . . or, more difficult still, reconcile a pyæmic or septicæmic theory with the undoubted fact that the well-known symptoms are fully developed prior to calving. Where does the putrefaction then take place? I answer, in the veins of the uterus. I believe the symptoms in the early stages to be due to phlebitis or thrombosis (it does not seem necessary here to enter into a discussion of the differences or separation of the two conditions, *i.e.*, which is dependent on which), the disintegration of the clot, and the discharge into the circulating medium of this product. It will probably be conceded to be a fact that, in subjects in which there is an unusual deposit of fat, the changes go on more slowly, and they are predisposed to a low grade of inflammation; also, that the gestation is especially remarkable for the formation of thrombi during its later stages. "In disintegrating these clots, the microscope reveals a great quantity of flattened epithelial cells from the vein, of a fusiform appearance . . . all of these cells present in their interior fatty granulations. By the side of these, other flattened and irregular cells are seen, which also contain fatty granulations. Other round cells, having a diameter from ·015 to ·02 of a millimetre, in one or more nests, contain fatty granulations. There are also numerous cells, in appearance exactly like pus globules or white blood-globules, but all containing fatty granulations. There are, in addition, great numbers of free fatty granulations, and granules soluble in acetic acid."* "The different coats of the vein may be infiltrated with pus . . . in other instances the internal coat is destroyed, as a sequence of the inflammation of the external coat, and then the cavity of the abscess communicates with the cavity of the vein, and pus is mingled with the blood. . . . All writers agree that the initial symptoms of this affection is most frequently a chill of moderate severity," which may well escape the notice of attendants to our patients. "Immediately in connection with the chill there is increased frequency of the pulse, with a corresponding rise in the temperature, and the respirations are somewhat hurried. The appetite is lost from the very outset. . . . It is a curious fact that the involution of the uterus does not seem to be retarded by uncomplicated Uterine Phlebitis. . . . In this form one of the most characteristic features is the rapid depression of the vital powers; the patient is stupefied, and rarely changes her position; there is usually, at quite an early period, considerable cerebral disturbance."

2nd. "Explain away the fact that the shorter the time after calving, in the disease making its appearance, the greater the fatality; when, should putrefaction be the cause, would one naturally expect the opposite to result?" This question has, perhaps, been sufficiently answered in the last section. I can only say further, that it would seem to be natural that the nearer to the period of parturition the application of a toxic agent is made, the less power would the system have of combating it; the subject having just passed through an operation which must, from its nature, be a great shock to the nervous system, is not certainly in so good a condition to receive a fresh shock as she would be some hours or days afterwards.

3rd. "Why does the disease *never* supervene on 'adherent placenta,' when

* This and all other quotations, unless otherwise noticed, are from *Barker*, "The Puerperal Diseases."

the fœtal membranes literally rot in the uterus?" That it *never* does happen as a sequel to this state of things is, I think, a rule that may have its rare exceptions. That it generally does not happen can be accounted for, I believe, in a great measure by the fact that the placenta, to be adherent, must be fibrous; * that the production of a fibrous placenta in a cow with a lymphatic temperament or a "fatty predisposition"—and these are the ones which are subject to the disease—would be almost an impossibility.

4th. "Where are the symptoms and *post-mortem* appearances of Pyæmia, when the secondary inflammations, effusions, and abscesses,—where even the typhoid symptoms in a case that recovers as completely in twenty-four hours as if no disease had existed?" So eminent an authority as Billroth remarks that "it is scarcely possible to make a name for every link between Septicæmia and purulent infection, diffuse metastatic inflammations, etc. . . . Septicæmia occurs without a trace of metastasis, and with diffuse metastasis. . . . Purulent infection without a trace of metastasis, and with it." I do not consider it within my province, nor necessary to the argument of this subject, to go into the various and conflicting theories of what is or what is not true Pyæmia. So long as fifty years ago, Gaspard, from many and careful experiments, deduced the following:—"1st. That pus introduced into the blood-vessels in small quantities can circulate through the system without causing death; provided, however, that after having produced a good deal of disturbance in the system, it be expelled by some critical excretion, chiefly by the urine or fæces. 2nd. But that introduced several times successively, and in small quantities, it ends by destroying life; that this result is arrived at much more quickly if a larger dose be at once introduced into the veins, and that it then causes different grave inflammations, as Pneumonia, etc. . . . That it is susceptible of being absorbed, but that it *then* causes inflammation of the serous membranes." These observations have since then been verified by Virchow and others. From the above-quoted facts, my deduction is that although we have in the system a poison capable of producing Septicæmia or Pyæmia, it is in the one case quite possible to have it expelled from the system by the usual channels, and so allow of a complete and rapid recovery; in the other, from the largeness of the dose given, we have a sudden and almost complete cessation of the vital functions, followed closely by death; this does not allow sufficient time for the establishment of metastatic abscesses and secondary inflammations, which "may or may not exist" in the pyæmic state. "Pyæmia is a secondary affection of a late period of the disease."

5th. "How comes it that, in the early stages, blood-letting is had recourse to with such marked benefit?" Except in the case of early and severe cerebral congestion, it would seem to be a very open question whether or not venesection is good practice; but your correspondent has intimated that it was apparently regardless of the particular symptoms presented by the case, and simply for the reason that the patient is in the early stages of "Milk Fever." It seems to me that this fact—if fact it be—is for him to prove, not for me to say why it is or is not so. Will "Scrutator" tell us what, in his opinion, causes the "suspension of the secretion of milk"? Is it from inflammation of the mammary gland, or does the gland cease to perform its function, and if so why? How is it that the mere "suspension" of this secretion causes a train of symptoms of so grave a character as are shown in these cases?

CHARLES P. LYMAN, V.S.

Springfield, Mass., March 29th, 1876.

* *Cazeaux's* "Midwifery."

BRITISH ARMY HORSES.

To the Editor of the VETERINARY JOURNAL.

SIR,—I shall feel obliged if you will give publicity to the few remarks I wish to offer regarding the comments made by the *Broad Arrow*, and noticed by you, on the mortality among the horses of the army on the British establishment. As the *injuries* which render the animal useless, and consequently necessitate his destruction, are *the cause* of this high percentage, and *not disease*, I cannot see how any application of veterinary science can mitigate the evil.

Will it be out of place if I mention what I consider the primary causes of most of the cases admitted into hospital, and therefore of the mortality?

1. When a regiment marches into a station, collar chains with iron logs are issued; the chains are in most cases very much *too* long, and the logs are so light as to be useless, for they have not weight enough to pull down the chain when lifted up by the horse. The ring through which the chain passes, if a movable one, mechanically prevents the chain running, and if a fixed one, is generally perpendicular instead of horizontal. All these impediments prevent a free motion of the chain; the consequence is that a horse can scarcely move without his fore, and *very* frequently his hind, leg getting over it. If this does not lead to a bad injury of itself, it irritates the other horses; they commence to kick, and a severe contusion or a broken leg is *too* frequently the result.

2. I need hardly mention the *unaccountable* injuries troopers receive, and for which eventually they have to be destroyed. These horses, when inquiries are instituted, are always said to have been "found loose in the stable in the morning."

3. In the temporary stables on the Curragh, there is not even a bale between the horses. The expense of the casualties last year in *one* regiment alone would have more than sufficed to provide bales for the accommodation of the two regiments.

4. Injuries from troopers kicking each other, or injuring themselves against the iron pillars or *fixed* iron bales, is of daily occurrence. I feel convinced that if *short collar chains*, *heavy logs*, and *swing bales* of either straw or deep boards were adopted, and the horses properly fastened up at night, we should have a considerable decrease in the death rate.

Yours truly,

A. ADRIAN JONES, V.S.,
Queen's Bays.

Newbridge Barracks, 2 May, 1876.

VETERINARY EDUCATION.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—You did me the honour to insert in your number for last September, a letter on the vexed question of veterinary education, and since then much has transpired to increase my confidence in the truth of the far-from-original ideas I expressed.

We have to contemplate various proposed changes, which, if effected, will exercise a powerful influence on the educational department of the profession. Amongst other things, there is much talk of the establishment of a higher degree, and with it, the title of *Veterinary University* is to take the place of College of Veterinary Surgeons. I do not think that the word "University" is at all applicable, or even admissible. University power is granted to enable a body corporate to confer degrees in as many different departments

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of knowledge as the ruling powers of the body may deem expedient. The charter of any one university will show this. Still, if the Royal College of Veterinary Surgeons is to receive university power, applicable to the single faculty of veterinary medicine, should it not be empowered to confer a rational, comprehensible degree, such as that of Bachelor (with the higher degree of Doctor) of Veterinary Medicine? If the Corporate Body of the profession are deemed unfit to be trusted with power to confer a university degree *worthy of the name*, for their own dignity's sake let them not seek the, under the circumstances, ridiculous title of a university at all. The mere substitution of *Fellow* for Member of the Royal College of Veterinary Surgeons, would be far preferable to the make-shift and unheard-of university degree which is proposed. Another weak point in the scheme is the method of selling the first portion of fellowships. Although it may gratify those who are allowed to buy them, it will render the diploma worse than valueless to those who would look on it in its proper light—as a proof of professional ability. Very few young men would submit to an examination under such circumstances, and far less would they be willing to pay the same fee as those who were simply allowed to buy the degree.

A far more important question, however, than that of the higher degree, is the due regulation of the requirements of the ordinary one; and on this subject opinions are now very numerous, and often grotesquely variable. Without quoting words, a few expressed ideas are as follows: the veterinary surgeon should be purely a practical man; all examiners should be veterinary surgeons; all examiners should have the higher degree; an apprenticeship should be imperative; the curriculum should be lengthened; apprenticeship should exempt from part of the curriculum, etc., etc. To comment on all opinions would be as useless as it would be tedious, but I should like to say a few words on one or two of the items.

Many practitioners who are in a position to take pupils, assert that an apprenticeship should be served in all cases previous to the college course. The medical profession abandoned that system some time ago, and it now exists only in the requirements of the Apothecaries' Halls. There is no uniformity in apprenticeship, as such; since with some practitioners a pupil may learn much, with others nothing, and with others, again, worse than nothing. No influential advocate of apprenticeship will assert that a recently passed practitioner, whose time is fully and perhaps vainly occupied in trying to make a practice, is in a position to take and instruct a pupil, and to send him to college, to be on a par with the pupil of a man of high standing and extensive practice; and how can the Royal College of Veterinary Surgeons venture to take cognizance of the success, position, and instructive power of its individual graduates? To enforce such a regulation would be an injustice to intending students of limited means, unless indeed the promoters, in their zeal, will set the example of asking *no premiums* from their pupils.

Notwithstanding the large number of schemes and opinions evoked by recent discussions, and the amount of interest and energy displayed by many, the subject of education appears to be as far as ever from satisfactory settlement. I have urged the necessity for a proper preliminary examination, which should be the same for all colleges. Whenever this question does arise, it is apparently shuffled on one side, as if it were of no importance; but until such an examination be established, and there is no obstacle whatever in the way, it is irrational to expect that the Education Committee can really effect much. The year may be divided into terms instead of sessions, and the examination into three instead of two parts, and many of the proposed alterations are very good; but the fact remains that we have the same material to work with, and examiners the same limited means of testing candidates, as before. For if ordinary education is deemed unnecessary to the veterinary student, there is

little hope that he will ever be tested by the rational and exact method of a paper-work examination. It matters very little how we build, if we have no foundation.

At times there seems to be some danger of the educational question degenerating into an ungraceful contest between practice and science. There is little novelty in our being accused of teaching at college much that is practically useless. From many such an opinion is valueless, and from all I think somewhat ill-considered. I venture to say that little is taught in our colleges but what is of practical use, provided that the student has the ability to apply it; and neither we nor our accusers can directly develop such a faculty.

The interminable changes that have been rung on the term *practical man* might well induce one to ask what it means. Does it mean a man who ignores science, despises knowledge, and blindly does as others do, or as others have done before him? Let us at least hope that this is not very often the case. The term means, or ought to mean, a man who can utilize science; to such a man no kind of knowledge is a burden, for he thinks for himself, and instructive progress is the natural result of his practice. It is often said that a college course spoils the practical knowledge of a student, *i.e.*, of an ex-pupil. This is often true, and would seem, at first sight, to be an argument against apprenticeship. The real fault lies in the shortness of the course ("a little learning is a dangerous thing"), which enables but few to really grasp their subjects, the majority learning only enough to make them timid and uncertain in actual practice.

I find that the subject is leading me rather too far, and as I write with perfect good feeling, I must not incur the danger of having the vials of either academical or *practical* wrath inverted over my head. Let me only say, then, that to attain a satisfactory result, actual practice and science must progress together, since rivalry, and even the suspicion of jealousy, can only tend to weaken the common cause.

I do not write as a pedant, and I do not wish future students to be more highly educated in order that they may appear more scientific, but that they may *be* more scientific while appearing less so, and that what are now too often, to them, great difficulties, may be easily overcome.

Believe me, sir, to remain,
Yours faithfully,
J. VAUGHAN.

New Veterinary College, Edinburgh,
April 14th, 1876.

CANADIAN DOMINION VETERINARY ASSOCIATION.

To the Editor of the VETERINARY JOURNAL.

SIR,—My attention has been called to a paragraph in the April number of your journal on the subject of a "Canadian *Dominion* Veterinary Association." I am afraid that the gentlemen who are interesting themselves in this contemplated association are doomed to disappointment. In human medicine endeavours have from time to time been made to incorporate an association embracing the whole Dominion; and such an association does exist, but it is merely a friendly union, without any corporate existence or power. No doubt it might be for the benefit of the veterinary profession that a similar brotherly banding together should be effected; but if, as I understand from your article, anything connected with veterinary education is contemplated, no act of incorporation need be looked for from the Dominion Parliament, as, by the Act of Confederation, each one of the several provinces forming the Dominion of Canada has uncontrolled jurisdiction over any matter connected

with education, whether professional or otherwise. It would, therefore, be beyond the power of the Dominion Parliament to incorporate any association such as is contemplated.

I am happy to avail myself of this opportunity of testifying that, thanks to the zeal, ability, and untiring energy of Professor Andrew Smith, of Toronto, we have a most flourishing Veterinary College, which from year to year sends out very highly accomplished graduates, and our province of Ontario is being rapidly supplied with veterinary surgeons equal in ability to those of any country in the world.

I am, sir, your obedient servant,

D. CAMPBELL, M.D., *Edin.*,
Chairman, Board of Examiners,
College of Physicians and Surgeons of Ontario.

PROFESSIONAL "BÊTES NOIRES."

To the Editor of the VETERINARY JOURNAL.

SIR,—In continuation of a letter under the above heading in the May number of your valuable journal, allow me to add a few words. The veterinary profession of this country, as at present represented, with very few exceptions, seems to consist of a body of men to whom the motto, "Every man for himself, and Providence for us all," might be very aptly applied. Is it not a fact that many of the members of the Royal College of Veterinary Surgeons are either combining the blacksmith, the publican, the commission agent, the livery stable keeper, the chemist and druggist, and such-like *trades* with their *profession* of veterinary surgeons? Are there not some who endeavour to outdo their brother practitioners by taking contracts at low prices, or by practising for small fees, or by advertising their patent medicines? Are there not others who have not a good word to say for their neighbouring brethren, but who run them down, and endeavour to do them all the professional harm they can to their own benefit? And yet we keep complaining about "professional status," "social position," etc., etc. Are we likely to improve in our position in society while these things continue, and the little word "Ego" is the predominating feature of our conversation? In the same number of the *Veterinary Journal* is a letter from Mr. William Field, advocating veterinary consultations. How is it possible we can recommend a consultation, when, as is well known, we cannot agree even to differ in an opinion? Look at the records of veterinary cases and trials brought before the public during the last two years! Did any one ever hear such opinions (upon oath), in direct contradiction one with another? Remember the famous case, "Foot-and-Mouth Disease in Sheep and Foot Rot;" the late trial at "Holbeach;" or, still later, at the "Gloucestershire Assizes." Are not these all scandals to the veterinary profession? Are such cases likely to inspire the general public with confidence in our science?

In my opinion, there is too much egotism and scepticism in the profession; and until this feeling wears off we must remain *in statu quo*. Will the new educational standard of examinations remove this? If so, in what way? Will it induce gentlemen to come forward, for the love of the profession, and in consideration of what is due to suffering animals, to alleviate their distress, and render them sound and capable; and to believe it possible some men may know better than themselves, and so seek their advice? Will it teach those who do know to have a fellow-feeling for their more ignorant brethren, and endeavour to give them their aid, willingly and readily? Or must we wait for the future generation to show us that, through the efforts of the few

at the present time to improve the educational status, and to induce a sound practical as well as theoretical experience, we have induced a different kind of man to compete; and that we have overcome the antagonism now amongst us, and have succeeded in raising the profession to that high position which is its due, and which it should be the aim, not to say ambition, of every member to secure for it, not only for the benefit of himself, but for his neighbouring veterinary brethren? In my opinion, the new Charter should contain a clause to the effect that no new member should be allowed to combine his professional avocations with trade. Clause 14 should most certainly be retained, and those non-qualified men now practising should be allowed to die out; but a veto ought to be put upon all aspiring beginners of this class. Hoping you will excuse my trespassing on your space with such a long letter, I beg to remain,

Yours faithfully,
VIS UNITA FORTIOR.

A REMINISCENCE OF THE ANNUAL MEETING OF THE ROYAL COLLEGE OF VETERINARY SURGEONS, MAY 1ST, 1876.

To the Editor of the VETERINARY JOURNAL.

SIR,—Some years have passed since I made my *first* acquaintance with the interior of the R.C.V.S. council chamber; and then my mind, attention, and eyes were concentrated on the "four batteries," mounted "each" with some three or four "*big guns*." These I had to attack and defeat single-handed and single-headed; so that one might well imagine I had but little time to survey the general interior of the chamber, as the batteries were quite enough for that night. Glad indeed I was to beat my retreat, and retire to the "funking room," there to await in anxious mood the announcement of my name from the top of the narrow little staircase leading from the chamber to the said little room. Never did I think that council chamber was such a stuffy, dingy place as I found it on my next visit on Monday, May 1st: so close, so stifling, windows thrown up, then closed, as the down-draught affected those of our calling who had entered the autumn of their lives. I was thankful indeed to escape to the open air,

"Sapere et fari quæ sentiat."

I have cogitated much since my visit, and have felt how ashamed I should have been had I not sent in my little mite towards the College Fund: and I am sure there are many, yes, very many indeed, who have not yet sent in their subscriptions towards this object, who would readily do so, would they but visit Red Lion Square, and then reflect.

The building is not such as we should possess—nay, I say it will be a disgrace if it goes on thus. The small amount at present in hand is quite inadequate to make a start with; let us then be up and doing. May I suggest that one more general appeal be made to the profession at large? and then, if there is no response, let all of us who have subscribed, enter our names as *annual subscribers*—say, of two guineas. This is not much to part with for so laudable an object. Let the period be limited to three or five years. I shall, for one, be pleased and proud to enter my name at once, giving the same sum I have already subscribed annually, for either period, as may be deemed necessary. It may be as well to state that I am only a rural practitioner—one who has collected a few crumbs to make a crust, and I am sure I shall not miss so small an annual tax. If I did, I would willingly forego many little frivolous luxuries I sometimes indulge in, rather than allow myself to be seated another anniversary meeting in that dingy room.

It is now a fact patent, that we must come to the front, so that the public can take cognisance of us. We desire to be publicly recognised; then by all means do let us come out as a *body* fully *developed*. Apathy must no longer exist with us; do let us all press on, now we are in motion; some general good must develop itself. I do most sincerely hope there is not a member of our profession who will be reticent, or retort as they say of the Athenian miser of old—

"Let him hiss on (he cries),
While, in my own opinion fully blest,
I count my money, and enjoy my chest."

There are other thoughts in my mind, but this one is uppermost; at some future time I will out with them also.

Yours most obediently,
ARTEMUS SECUNDUS.

CORRIGENDA.

At page 396 of last number, line 2, for "healing heart" read "healing art."

NOTICES TO CORRESPONDENTS.

Mr. FROST, Royal Artillery, is thanked for his letter and the generous sentiments expressed in it. We shall be always pleased to receive his communications.

We regret exceedingly that the valuable papers from Professor Fearnley, Messrs. Broad, Blakeway, Duncan, Thomson, "Max," Lambert, Nelson and Fletcher, and Howard, are unavoidably pressed out of this number. They shall appear in our next, when the proceedings of the Central and Liverpool Veterinary Medical Societies for May will also be inserted.

Communications, Letters, Books, etc., Received.

COMMUNICATIONS have been received from T. D. Broad, Bath; Staff Veterinary Surgeon F. F. Collins, Simla; Professor Vaughan, Edinburgh; A. Adrian Jones, Queen's Bays; H. Dyer, London; Professor Walley, Edinburgh; A. R. Charles, London; Staff Veterinary Surgeon J. Collins, Dublin; Dr. Campbell, Ontario; R. F. Frost, R.A., Mooltan, India; Captain Russel, Grantham; "Max;" "Vis Unita Fortior;" J. W. Hill, Wolverhampton; Messrs. Nelson and Fletcher, Sheffield; W. Fryer, Sheffield; T. D. Broad, Bath; J. Howard, Woolwich; R. Ward, Winchester; "Artemus Secundus."

BOOKS: Third Annual Report of the Victoria Agricultural Department; Shanghai Health Officer's Report for 1875; Second Annual Catalogue of American Veterinary College; Report of American Veterinary Hospital; *J. W. Hill*, Some of the Diseases of Farm Stock; *L. Franck*, Handbuch der Anatomie der Hausthiere.

JOURNALS: *Wochenschrift für Thierheilkunde und Viehzucht; Archives Vétérinaire (d'Alfort); Veterinarian; Der Thierarzt; Animal World; Annales de Méd. Vétérinaire; Journal de Méd. Vétérinaire et de Zoötechnie; Recueil de Méd. Vétérinaire; Archiv f. Wissenschaftliche und Practische Thierheilkunde; Oesterreichische Vierteljahresschrift f. Wissenschaftliche Veterinärkunde; Revue Vétérinaire; Archivio di Medicina Veterinaria.*

NEWSPAPERS: *Australasian; Agricultural Gazette; Farmer; Land and Water; Rod and Gun; Montreal Gazette; Montreal Evening Star; Wilts and Gloucestershire Standard; Toronto Mail; North British Agriculturist; Edinburgh Courant; Edinburgh Daily Review; Scotsman; Allahabad Pioneer; Indian Public Opinion.*

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publisher, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded addressed to the Editor, "Veterinary Journal," Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.